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SEPTEMBER 2015

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THIS ISSUE: Why do so many music lovers dislike the audiophile state of mind?

### Why They Scorn Us—and Why We Should Care

re you on Facebook? Twitter? Instagram? Reddit? Social media has done much to bring together people of every interest imaginable to share their fascinations, desires, and, occasionally, delusions. From fans of frogs (FrogStomp) and proponents of clean public toilets (Benjyo Soujer) to a group that challenged an Iranian cleric's statement that women's flimsy attire causes earthquakes (Boobquake), social media is a global town square in which anyone with a keyboard and an attitude has an equal voice.

Like all self-respecting Facebookers, audiophiles also have their groups, including Audiophile Network, High End & Vinyl Lovers United, Audiophiles North America, and Hi Fi Audio, with memberships ranging from 3000 to 10,000. On these virtual forums audiophiles exchange opinions, upload system photos, and discuss the inexhaustible pros and cons of cables, tweaks, noise isolation, and, of course, analog *vs* digital

For fun, I recently took a break from posting to my own FB group, Jazz Vinyl Lovers, to ask FB audiophiles a handful of age-old but still-relevant questions: "Why do so many music lovers dislike the audiophile state of mind? Is it envy of audiophiles who have more long green to spend on music reproduction than the rest of us? Or is it that only the music should matter, and not the gear? Or, since most people can't hear the difference anyway, why the serious expenditure on what amount to boys' toys?"

I was gobsmacked. Responses to my queries rolled in at a seemingly exponential clip—more than 500 in less than three hours, and more continued to arrive for a week, eventually totaling 50 single-spaced pages. That's a lot of kvetching about cables and soul-baring about speaker sensitivities!

A sampling of the responses:

"If you have a nice high-end audio system," said Aleksandar Matijaca, "post a pic on http://www.reddit.com/r/audiophiles/ and wait for the hatred."

One member boasted: "Who says it has to be shared? I'm an audiophile for me. It satisfies, entertains and pleases me."

"I find the hobby to be pedantic and petty," wrote John Fiebke, "filled with socially awkward dweebs who argue constantly about minuscule details that have nothing to do with music and everything to do with just winning a contest of 'my stereo is better than yours.' If this hobby . . . were about the music I wouldn't hear Diana Krall at audio shows year after year." Ouch!

But does the other green play a role?

"Your suggestion that [envy] might play a role could easily be perceived as a hostile, elitist sentiment," Dan Sorrells replied.

Think again, Dan.

"People nowadays have access to credit and other means to gear," mused one respondent. "Having an expensive set-up doesn't necessarily mean someone has enough disposable income to justify buying the gear, kinda like if a guy drives a Ferrari but lives in his mom's basement with student loans and credit card debt."

Still another suggested that all human beings are essentially created equal: "I believe any human can hear the difference in quality given the opportunity," wrote Conrad Hunter. "It's just that some people choose to place value on that difference while others don't. But once you've recognized the difference you can never 'unhear' it."

Popular New York City radio DJ Paul Cavalconte thinks it's all in our heads: "The dichotomy is that audio is satisfying on both lo-fi and hi-fi levels. A great rock oldie on a transistor radio is just as sweet as a symphony on a cathedral-filling system. There's a limitless path to better, but no right or wrong."

This, from a sensualist: "I believe the senses can be developed till you die and the pleasuring of those is mostly the center of our existences," said Nicolas Letman-Burtinovic.

And a well-positioned comment from Bob Weiniger: "The general disdain for audiophiles stems from the present day attraction to egalitarianism, especially amongst the 'have-nots,' who having found a rationale for putting down those who have accomplished (and therefore amassed) more than they, somehow feel less inadequate by demonizing the 'haves' and their accomplishments. Cognoscenti have ALWAYS known that 'the best' shall always cost more than the 'run of the mill.' There is no substitute for quality and quality costs money. This is as it should be."

Still curious, I posted a follow-up question: "How can we win converts to our music-loving audio pursuit?" This time, unfortunately, the number of responses from the audiophile groups was close to nil.

Quizzing a Facebook group isn't a scientific survey, but perhaps audiophiles harbor mixed emotions about their hobby, if it is a hobby. How do we defeat the us-against-them mentality that frames audiophiles either as nerds focused on sonic artifacts or as men obsessed with expensive hardware? Perhaps we are OCD patients more intent on interacting with merchandise we can buy than relationships we should cherish. A handful of munificent FB audiophiles responded with positive advice: appeal to friends and family and rely on what you love best—appeal with the music.

"Start playing music at shows that is found in actual music lover's collections rather than 'audiophile' shite that lives in a different universe to what real people listen to," wrote Eric van Spelde.

Roscoe Trey Nicholson said it best: "The greatest reaction I have had from a non-audio nerd was an ex-girlfriend hearing her favorite album (Radiohead's *Kid A*) on my system. In tears. And from then on, we'd wake up, make coffee, and put on a record every weekend morning."

Ken Micallef is a freelance music journalist and jazz vinyl obsessive currently hunting for a mint mono copy of Harpo Marx's Harpo At Work (Mercury MG 20363).

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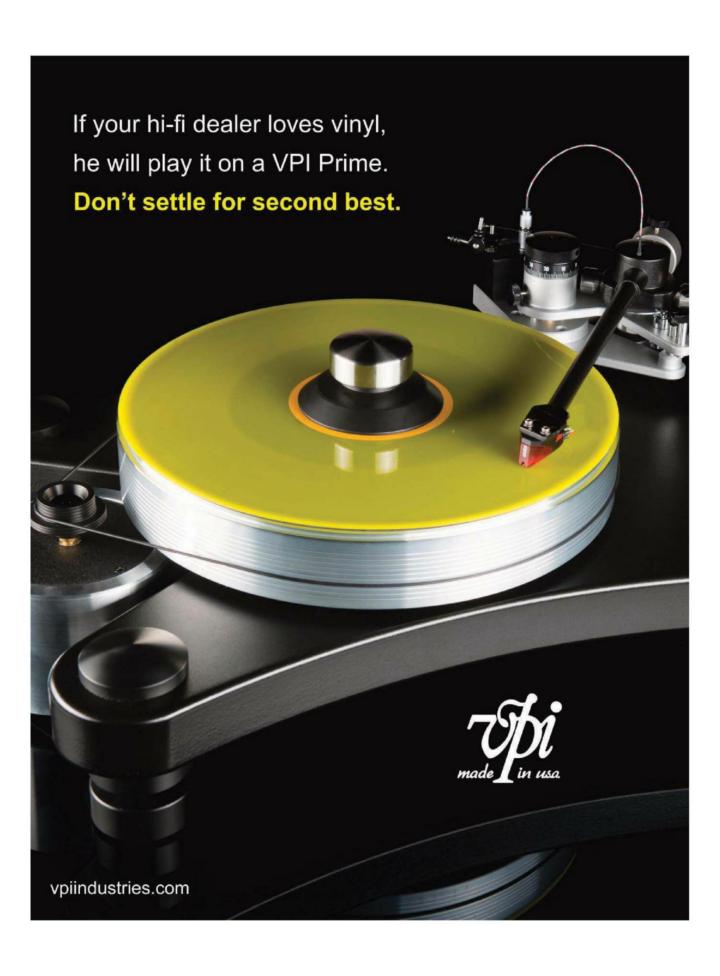
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### LETTERS FEEDBACK TO THE EDITOR

TAKE HEED! Unless marked otherwise, all letters to the magazine and its writers are assumed to be for possible publication. In the spirit of vigorous debate implied by the First Amendment, and unless we are requested not to, we publish correspondents' e-mail addresses.

### **Alan Blumlein**

Editor:

Re: Paul Messenger's report in the July issue's "Industry Update" (p.17), your subscribers may enjoy reading *The Inventor of Stereo: The Life and Works of Alan Dower Blumlein*, by Robert Charles Alexander (Oxford: Focal Press, 1999). It is a fascinating account of the life and untimely death of one of the absolute geniuses of the 20th century. His accomplishments were truly amazing. —*Charles Crawford Louisville, KY ccrawfod@aol.com* 

### **Harvey Fletcher**

Editor:

I was very interested to read Paul Messenger's report (July, p.17) on the posthumous awarding of the IEEE Milestone plaque to Alan Dower Blumlein, whose work at EMI on audio systems contributed so greatly to the advancement of audio technology. Unfortunately, Mr. Messenger credits Blumlein with an achievement that is not his, namely the making in 1934 of the first intentional stereophonic recording of an orchestra. That honor belongs to Harvey Fletcher's research team from Bell Laboratories, which made the first stereo recording of an orchestra on March 12, 1932, in Philadelphia's Academy of Music, The orchestra was the Philadelphia, the conductor was Leopold Stokowski, and the music was two brief excerpts from Prometheus: The Poem of Fire by Scriabin.

In the late 1970s, Bell Laboratories hired Ward Marston to prepare those excerpts for an LP issue, along with other wide-range mono and stereo material that the Labs recorded with Stokowski in 1931 and 1932. I have copies of the two Bell Labs *Early Hi-Fi* LPs in my collection, and can report that they are technically and musically amazing.

–Donald Bilger Livonia, MI

### The wrong Mozart symphony

Editor:

Your July article about Alan Blumlein referred to Mozart's 40th Symphony as the "Jupiter." Actually, Mozart's last symphony, No.41, is called the "Jupiter." You also wrote that it was recorded stereophonically and direct-to-disc. Did stereo

groove cutters exist at that time?
—David Adler
dcarladler@aol.com

Yes, Mr. Adler, we are red-faced. We inserted the number of the symphony, which the writer had omitted, just identifying it as the "Jupiter," but we mistyped. This error was compounded by our not catching it in proofing. Regarding the question of stereo in the 1930s, among his many other innovations, Alan Blumlein invented the stereo disc-cutting head.

-John Atkinson

### **Recording the drums**

Editor:

I have been an avid subscriber of Stereophile for over 15 years. David R. Adler's review of Wadada Leo Smith's The Great Lakes Suites (May, p.121) omits mentioning a very disturbing recording technique. Although recorded here by TUM Records, it is a technique used by ECM in every recording I have heard that includes a drum kit. The recorded drum kit is "split." In other words, some parts of the instrument (crash cymbals, a tom-tom) image out of one loudspeaker. Other parts of the instrument image out of the other loudspeaker (hi-hat cymbals, another tom-tom), with the remaining parts (snare, kick drum, etc.) imaging in various areas between the speakers. The distance between my two speakers is 9.5' from tweeter axis to tweeter axis. This might be a truthful recording of the natural physical integrity of a drum kit if the kit were played by a giant octopus.

I know this isn't a problem with my playback equipment. I own a very high-end system in a very well-tuned, completely dedicated listening room. This recording practice should immediately cease. We, the music-buying public, would be outraged if, as an example, the high string of a guitar imaged out of one

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speaker and the low string imaged out of the other speaker, with the remaining strings imaging throughout the space in between both loudspeakers. I suppose ECM and, in this case, TUM chose this recording philosophy because it "sounds better" (really?) than to accurately record a drum kit in its natural physical integrity at the back center of the soundstage, or perhaps off to one side, as in many Blue Note recordings.

I know, having played drums for 35 years, that recording engineers have a great deal of flexibility in the soundstage placement of an instrument when recording in a studio. But still, is it okay to separate elements of a particular instrument and unnaturally place them wherever in the soundfield?

I am a huge fan of Jack DeJohnette, one of the great jazz giants of the drum kit. Imagine my disappointment that I cannot feel and figure out his four limbs in syncopation because drums and cymbals are scattered all over the soundfield. Had I known this was the case, I would have never purchased this CD, no matter how "good" it sounds.

Stereophile doesn't give high marks to Bose speakers because their speakers do not image well or accurately reproduce the recorded event, even though they "sound good no matter where you sit in a room." Sorry, Stereophile: the "Sonics" for The Great Lakes Suites rate one star at best.

-Gordon Kennedy Longmont, CO knodrog@msn.com

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You make an interesting point about recording drum kits. In my own recordings where I use close miking, I still capture the drums in stereo. However, I must admit that with some projects, it does indeed work best in the mix to spread the kit over the entire stereo soundstage, just as you describe and condemn. The image of the drums becomes the canvas on which to place the images of the other instruments. And at other times, yes, it does sound wrong.—John Atkinson

#### **Editor:**

Thank you for the response. When recording drums as we discussed, it might sound better in general, but for us very small percentage of drummers, it sounds terrible. Would the larger buying public really complain if we accurately recorded

the drum kit? And I am curious as to why you believe that, for a particular recording, it sounds best to spread the individual drums of the drum kit over a large portion of the canvas. How do the other instruments benefit by employing this technique?

—Gordon Kennedy

As discussed in Evan Eisenberg's classic book The Recording Angel (2nd Edition, Yale University Press, 2005), the answer to your question lies in whether or not a recording is intended to be a documentary record of an actual live musical event or a new work of art in its own right. If the latter, then the producers are entitled to do whatever they like, if they feel it serves the musical intent. But if the former, they should not.—John Atkinson

### Pig Media

Editor:

"Never fight with a pig. The pig doesn't understand, and you'll just get dirty."

old adage

Okay, I've had it! Not once, not twice, but three times I've watched as top editors and contributors at *Stereophile* have wasted precious space by whining, either here in the pages of the magazine or on their associated blogs. What are Our Guys complaining about? Idiots online or in the popular press who don't understand or even care about audiophilia.

Sadly, perhaps tragically, just because you fellas can tell one amp from another without checking the name on the case doesn't mean you're prepared to take on a public argument and win it, even if folks you've never met before are hunting you down at big shows to beg you to test their new \$28,000 tonearm.

Guys, there's only one point to public argument, and that is winning; *ie*, making the other side lose. And the difference I'm talking about now is the difference between taking up boxing as a sport down at the local gym with your own personal instructor, and stepping into the ring in Vegas for a title bout. Because once you take any argument public, the rules change. As they should!

Look, competitors don't go on *Iron Chef America* to cook, though they know how. They also aren't there to engage in a heated one-hour competition just to enjoy the finer points of gastronomy, or to enlighten their opponent (or the audience) on epicurean principles. And they damn sure aren't there to appreciate the taste of great food. Those are all things they could do at home in pajamas. No, what they're there in that auditorium to do is to win. And, in the end, one side wins and the other doesn't.

Now, ardent Stereophile readers know that in a product shoot-out at some other audio magazine, we can pretty much tell in advance which one's going to "win"it's almost always going to be the more costly one. Not so here at Stereophile! Instead, this magazine's reviewer is gonna explain in exhaustive, even tedious detail how both products work before going on to carefully audition each one, often for months, in order to appreciate the subtleties of both. Typically, there's no "winner," just two different approaches suited to two different ideals of perfection; eg, I love the sound of tubes, so I'll pick this one, but if you prefer the sound of solid-state, you might prefer the other.

Sadly, perhaps tragically, that's not how public argument works, whether on the Web, in popular media, or in politics. Participants aren't there to offer an explanation of some subtle technical detail, they're there to hammer the opposition; and, just as on *Iron Chef*, no one, including us, wants to hear about it if you end up losing. Times is tough all over, baby.

Sadly, perhaps tragically, first John Atkinson, then Michael Fremer, and, now Art Dudley, at the end of his July "Listening" (p.36), have retreated to these friendly pages—the one thing we look forward to each month, the very same one we eagerly grab for from a mailbox filled with paper litter, mostly bills and ads (doesn't anyone write letters any more?)—to complain about how they were treated in one public argument or another. Because, unfortunately, nobody taught Our Guys how to throw a punch, or even the basic rules they were supposed to follow.

See, before, Our Guys never had to win. Because in these sacred pages, it's never about winning. We're dedicated to inquiry here, not public argument. Oh, sure, maybe my whole audio system costs less than what Fremer has put into his combo of tonearm, cartridge, and phono stage (this week), but, anyway, we don't read "Analog Corner" to find out what to buy or what not to. (Sorry, manufacturers!) Instead, we read Mikey to discover what he's learned that's new. Me, I'm always after what will help me understand and listen more effectively, because I want to apply his newfound knowledge to my own listening sessions. Same goes for John Atkinson and Art Dudley.

Here, in these pages, we can argue respectfully, we can debate, we can even select from an array of opinions. We can also take a position, only to abandon it as new evidence comes in. Thing is, nobody ever wins here unless we all win, so that's how we treat one another.

We're engaging not in public argument but in public inquiry, which is intended to change people's minds, to channel them into directions we believe will improve the way our society is heading. As an example, the Reverend Martin Luther King Jr. was a master of public argument, both as a great man and as a great leader. He moved our nation in a direction he *knew* was right, or at least better, than the direction we were going. Thus, his speeches were not inquiries into injustice, or debates about different ways to accomplish his goals, which he could have done at home in his pajamas. Instead, King wanted to win, in order to one day achieve a better nation. And, unlike our beloved Stereophile editors, he refused to lose.

And anyway, that's not the job of reviewers, because, obviously—thankfully—they aren't equipped for it.

So all I hope is that, from now on, in the face of public argument, our beloved editors, when faced with a new argument, can learn to quietly say to themselves, "Well, you're wrong and I'm right, so, like Hank Snow in the song, I'm gonna be moving on. And I won't bother my readers with your ideas, which are stupid anyway, or with this stupid argument."

In the end, all of this, believe it or not, is simply a love letter to John, Mikey, and Art. Because we want you to stop wasting time throwing your pearls before the swine out there in the streets, and instead sit down with us for the nice little candlelit dinner we've made for you. And now, let's have some music.

See? We've even brought you flowers.

-Sandy Untermyer

Appling, GA

sandyu@icloud.com

Thank you for reading our stuff, Mr. Untermyer, and for taking the time to write such a thoughtful letter. I will take to heart the excellent points you have made.

—Art Dudley

#### RIP Eric N. Blackstead Jr. 1942-2015

Editor:

Eric N. Blackstead Jr. passed away on Wednesday, May 27, 2015, in Essex Fells, New Jersey. Mr. Blackstead was a brilliant man who produced the five LPs—the two soundtrack albums *Woodstock* (3 LPs) and *Woodstock Two* (2 LPs)—of some of the most important compilations of music of the 1960s, recorded at the historic Woodstock Music & Art Fair in Bethel, New York, in August 1969. —*Peter J. Radomski midgetfail@idoud.com* 

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# INDUSTRY audio news & views UPDATE

**SUBMISSIONS:** Those promoting audio-related seminars, shows, and meetings should e-mail the when, where, and who to JAtkinson@ enthusiastnetwork.com at least eight weeks before the month of the event. The deadline for the November 2015 issue is August 20, 2015.

### **US: NEW YORK**

Stereophile Staff

We are pleased to announce that, on June 15, Art Dudley joined *Stereophile* magazine in the full-time position of deputy editor.

Art has extensive experience in the world of magazine publishing, beginning with Backpacker in the 1970s, followed by a stint at The Absolute Sound. Following some years reviewing audio gear for Hi Fi Heretic and Sounds Like..., in 1994 Art founded his own audio magazine, Listener, which gained an enviable reputation for telling it like it was. Listener was sold to Englander Communications in 1999, with Art remaining as editor. However, Englander was unable to attract enough new subscribers to ensure profitability, and closed the magazine in fall 2002. In January 2003, Art joined Stereophile



as editor at large, contributing equipment reports and his popular monthly column, "Listening," the 150th episode of which appeared in *Stereophile*'s June 2015 issue.

Working from his home, in upstate New York, Art will report to the magazine's longtime editor in chief, John Atkinson.

### UK: HAMPSTEAD, NORTH LONDON

Paul Messenger

Although the name is familiar enough, as is its original association with its founder, legendary record producer Sir George Martin, I had never visited AIR Studios, and certainly not in its third and current location, a converted Congregational church built in 1884 in Hampstead, North London. The studio first opened for business as AIR Lyndhurst Hall in December 1992—see www.airstudios.com/about-us/history/—and has become a primary venue for the recording of orchestral film scores.

I was visiting to witness a direct-todisc recording, produced by Mike Valentine, of the Syd Lawrence Orchestra playing mainly Glenn Miller tunes. The orchestra was founded in 1967 by the late Syd Lawrence (1923-1998), a respected trumpet player who fell very much in love with the big-band sound of the 1940s. After more than a decade with the BBC Northern Dance Orchestra, Lawrence left, and recruited some of its members to form what may well have been the first ever tribute act, which quickly built a fine reputation for its professionalism and performance. Following Lawrence's retirement, in 1996, trombonist Chris Dean took over, and continued to expand the orchestra's repertoire.

After working in the British film industry as an underwater cameraman for some 30 years, Mike Valentine began producing audiophile-oriented





**Left:** AIR Lyndhurst Hall; **right:** Cutting a direct-to-disc album puts a big strain on the musicians.

### CALENDAR OF INDUSTRY EVENTS

ATTENTION ALL AUDIO SOCIETIES:

We have a page on the Stereophile website dedicated solely to you: www.stereophile.com/audiophile-societies. If you'd like to have your audio-society information posted on the site, e-mail Chris Vogel at info@vcable.us and request an info-pack.

Please note that it is inappropriate for a retailer to promote a new product line in "Calendar" unless this is associated with a seminar or similar event.

### **CALIFORNIA**

■ Friday-Sunday, August 14-16: The *California Audio Show* takes place at the Westin San Francisco Airport, 1 Old Bayshore Highway, Millbrae 94030. For more information, visit http://caaudioshow.com.

■ Sunday, August 23, 2-5pm: The Los Angeles & Orange County Audio Society will hold its monthly meeting at The Audio Salon, in Santa Monica (at Bergamot Station, 3035 Kashiwa Street, Gallery F1). Our host, Maier Shadi, will demonstrate top-of-the-line equipment in a space custom-designed to allow music to sound like music. Audio Alchemy's Peter Madnick, who has been a part of this industry for over 40 years, will address the Society. For our meeting, the Audio Salon will feature the latest electronics from Audio Alchemy—a spectacular system at a price that won't break the bank. Eastwind Import will be on hand to offer for sale personally selected vinyl and CDs. A raffle is planned and an extraordinary lunch will be served. Parking is free. Guests, visitors, and new members are invited. For more information, visit www.theaudiosalon. com and www.laocas.com, or call Bob Levi at (714) 281-5850.

■ Sunday, September 27, 2–5pm: For the first time, the **Los Angeles & Orange County Audio Society** will hold its monthly meeting at **Shelley's Stereo & Video**'s new showroom, in

As the Syd Lawrence Orchestra performed, in a single unbroken take, a complete LP side's worth of music, it was cut directly to lacquer on a Neumann lathe located well away from the studio itself, a separate feed

was also sent to a 24-track Studer tape deck. This will be mixed down to two-track, ½" tape at 30ips. The plan is to then feed the mixdown to the cutter head without any equalization or compression/limiting, and to release both versions as a double album, to enable interesting comparisons. Those seeking a taster might visit www.chasingthedragon.co.uk; there's a link to download an MP3 version of the SLO performing Miller's "In the Mood."

While listening to and watching the recording being made, I chatted with Graham Tricker, of GT Audio, which makes and/or distributes a number of audio brands in the UK. He told

Woodland Hills (22102 Clarendon Street). Our hosts. Alon Moscovitch and Wesley Katzir, will demonstrate the latest speakers and electronics for this showcase of planar-magnetic technology. Representatives from Audeze, Magnepan, Shunyata Research, and Simaudio Moon will address the Society. Eastwind Import will be on hand to offer personally selected LPs and CDs for sale. A raffle is planned and a fabulous lunch will be served. Parking is free. Guests, visitors, and new members are invited. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850ff

Sunday, October 11, 2-5 pm: The Los Angeles & Orange County Audio Society will hold its monthly meeting at Weinhart Design, in the scenic hills of Bel Air (2337 Roscomare Road, Suite 1, Los Angeles 90077). David Weinhart will feature Synergistic Research's cables and products, including room treatments galore. We will feature Synergistic Research's HFT, Black Box, and Atmosphere, which



The vintage Neumann U47 mikes were modified with Tron power supplies.



John Webber operates the cutting lathe's controls.



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me how Valentine had approached him to find out whether the power supplies of his vintage Neumann U47 mikes could be upgraded. Tricker realized that the only solution was to begin anew, so a new Tron supply was designed to deliver perfect power to the tubes' anode-voltage rail, the filaments, and the bias circuitry. Tests of a prototype indicated a very worthwhile improvement, so Valentine commissioned Tricker to produce supplies for all his mikes, and asked if he could further improve the U47s themselves. Another upgrade took the mikes'

performance even further, and two of the modified U47s with new power supplies were used in recording the Syd Lawrence Orchestra.

AIR Lyndhurst is currently under threat from a proposed basement expansion in a neighboring building, which will render the studio too noisy for recording sessions for several months. As of the time of writing, a petition was being organized to try to persuade the local council to prevent the development; see https://you.38degrees.org.uk/petitions/saveair-studios.

**UK: BROADSTAIRS, KENT**Paul Messenger

My first experience of the Professional Monitor Company, aka PMC, was in 1992, when cofounder Adrian Loader brought me review samples of the LB1, one of the company's earliest loudspeaker models. Loader died soon afterward, but I subsequently met the company's other founder, Peter Thomas, and discovered that we'd both grown up in the same part of the country—the Isle of Thanet, in East Kent.

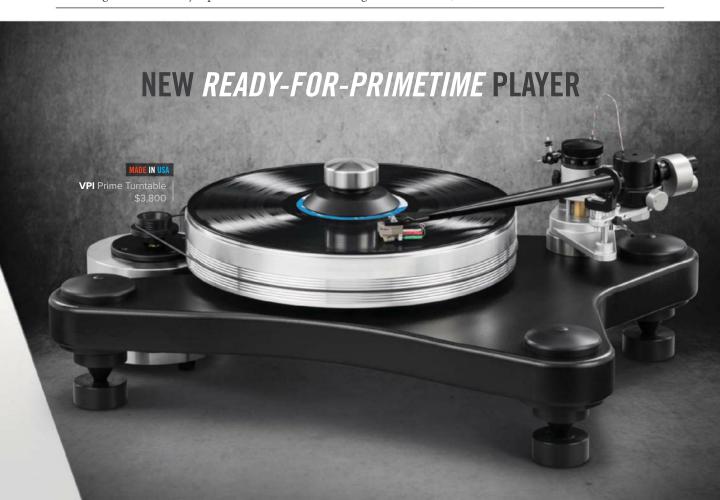
Although PMC has always operated

out of premises north of London—their main factory is in Luton, and the new HQ slightly farther north, in Biggleswade—Thomas recently managed to acquire a terraced property overlooking the sea in the most fashionable part of Thanet, the town of Broadstairs. He's been supervising some extensive construction work there, especially in the basement, where a top-quality listening facility is being built.

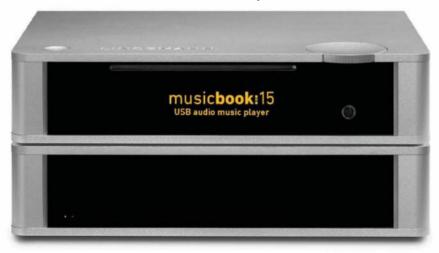
A few weeks ago I got to hear this space; although it's still a work in progress and our listening session was brief,

will help you understand how to tune your room and build an easily adjustable listening environment. David Weinhart will pull out all the stops to show you what's possible in great sound—come hear and see his superb electronics and speakers (to be announced). October is a time for great listening to the newest products available: Join us to find out what's on that list at Weinhart Design. **Eastwind Import** will be on hand to offer extraordinary vinyl and CDs for sale. A raffle is planned and lunch will be served; free parking nearby. Guests, visitors, and new members are invited. For more information. visit www.laocas.com or call Bob Levi at (714) 281-5850.

■ Saturday, October 17, 10am-10pm: The *Burning Amp Festival* will be held this year in Silicon Valley, at *Interana* (305 Walnut Street, third floor, Redwood City 94063). Because this new venue provides more listening rooms in which more systems can be auditioned, we are asking exhibitors to demo their previously built and shown DIY components along with



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Pictured above is the Musicbook 15/55 system. On the outside it's sumptuous, graceful and cleverly designed with refinements and finesse worthy of Dr. Jekyll. It features: solid aluminum casework, state-of-the art DACs, a full-function remote control and an easy-to-use one-touch control wheel.

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Together these two boxes comprise a complete state-ofthe-art high-performance music system. Just connect all your sources and add speakers.

LINDEMANN.

it was clear that the room is going to be something special. Thomas told me that his inspiration had been the listening room in the BBC's R&D facility, now demolished, at Kingswood Warren, in Surrey. He worked at the BBC for a number of years before starting PMC, and used the Kingswood Warren room while developing PMC's first product, the original BB5—a powered, high-spl monitor that quickly found its way into Metropolis Mastering and the BBC's Maida Vale studio.

Thomas well remembers the low noise floor and superior acoustic of the Kingswood Warren room, and is seeking to replicate these, first in Broadstairs, and eventually in Biggleswade. Part of the reason is to provide him with tools for developing new speaker models, but he also plans to make the facility available to reviewers and other industry people, and to use it to demonstrate system performance to potential customers.

He's also trying to anticipate the evolution of the global hi-fi market. Today's fewer but increasingly wealthy customers are unlikely to visit traditional dealers, and may well expect a manufacturer to get involved in the purchase. Others may hand off the entire decision-making process to an installation consultant. Thomas intends to make his listening facilities available





to these sorts of customers via well-trusted key dealers.

So far, the work done on the Broadstairs basement room has been elaborate and extensive. The room itself. enlarged by excavating under a patio, now measures 32' long by 16' wide by 8' high. The acoustic treatments have been designed by Jochen Veith, of JV Acoustics Audio & Acoustic Consulting, based in Brunnthal, just south of Munich, Germany. The sidewalls are heavily lined with full-frequency bandwidth absorption panels, and above the false ceiling is another 150mm thickness of absorption materials. Two bass traps, one to either side of a fireplace, operate below 120Hz.

The hi-fi hardware was still being installed when I visited, so the full flexibility of the facility wasn't yet available. The system I listened to comprised a stereo pair of PMC's MB2 XBD-A SE speakers with custom Bryston electronics: a combination of 4BSST2 and 7BSST2 power amplifiers, plus a 10B electronic crossover. Since electronic protection wasn't needed in this "fixed" system, it was omitted as part of the customization process, which significantly improved the sound quality. Cables had also been laid for passive and for multichannel operation, the latter using two pairs of PMC wafer2 speakers for the side and

rear channels, and a special version of PMC's IB2 SE for the front center channel.

What struck me most forcefully during the brief listening session was just how efficiently the usual problems with the listening room had been eliminated. The stereo imaging was stunning, and if the sound may have been a bit too dry and "anechoic" for some tastes, its analytical capabilities were very superior indeed. I will be first in the queue to make use of it for auditioning speakers. Some say that the listening room is a crucial part of the hi-fi system, the final link in the audio chain. Peter Thomas's new listening room proves it.

**Top:** The PMC speakers are powered by Bryston amplifiers, housed in a converted bathroom; **bottom:** PMC's listening room features acoustic treatments designed by Jochen Veith. of JV Acoustics.

their latest creations. **Nelson Pass** will present his latest breakthrough, and offer three other presentations. All day, **Siegfried Linkwitz** will demo his LS Studio Speaker system with miniDSP crossovers and **Bruno Putzeys**'s Hypex amps. Food and snacks provided; lunch available. Exhibitors: Please arrive by 9am. Social Hour(s): 8pm. More information at www.burningamp.org, or contact Mark Cronander at mark. diyaudio@gmail.com.

#### **GEORGIA**

Sunday, September 13, 2-5pm: The Audio-Video Club of Atlanta hosts a program featuring singing sensation Lyn Stanley performing her latest jazz/romance songs. **Integrity High Fidelity Solutions** will provide equipment by Atlas Cables and Densen Electronics, and loudspeakers by Russell K., among other items. Both LP and digital sources will be used. Location: Dunwoody North Driving Clubhouse, 4522 Kingsgate Drive, Dunwoody 30338. Guests welcome; refreshments provided. For information, contact John Morrison. President, at (770) 330-3919 or jhm3@bellsouth.net; or Chuck Bruce, at (770) 550-1434. Visit the club website for latest details: www.avcoa.org.

■ Thursday-Saturday, September 17-19: HiFi Buys will celebrate the Grand Opening of the Buckhead store, which is now fully operational (3157 Peachtree Road NE, Atlanta 30305)! On Thursday, September 17, from 7 to 9pm, our featured speaker will be Paul Barton of **PSB Speakers**. Alex Brinkman of **Ayre Acoustics**, David Schultz of **REL**, and representatives of **Rega Research** will be on hand to demonstrate and discuss their great products. Friday, September 18, from 7 to 9pm, Richard Vandersteen of Vandersteen Audio. Dave Gordon of Audio Research, Kathleen Thomas and Jett Logan of AudioQuest, and Mat Weisfeld of **VPI** will all be here to demonstrate and discuss their fine products. Saturday, September 19, will be an open-floor sales dayyou'll be able to talk directly to the representatives and manufacturers about the products you are interested in! Yes, even Richard Vandersteen agreed to this!



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- Robert Deutsch, Stereophile, December 2014







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# ANALOG BY MICHAEL FREMER CORNER

THIS ISSUE: Mikey auditions DS Audio's DS-W1 "Night Rider."

### Shedding Light—an Optical Phono Cartridge

sing light to read data from a disc sounds a lot like the technology behind the Compact Disc—but you may be happy to hear there's nothing digital about DS Audio's optical phono cartridge. The DS-W1 uses the motions of a Shibata stylus and boron cantilever to modulate the output of its externally powered light-emitting diode (LED).

More good news: The DS-W1 optical cartridge plus its associated electronics, which replace the phono preamp, cost only \$8500—less than the price of many high-end cartridges alone. (Of course, many great cartridges and phono preamps

cost much less.)

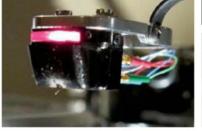
Toshiba introduced the first optical cartridge, the C-100P, in the 1970s. It had a filament-based lamp that produced a lot of heat and was prone to failure. The DS-W1's LED produces almost no heat, and has a (presumably) much longer lifespan.

It turns out that Hamaguchi Kazuo, the designer of the Toshiba C-100P, is still around. A few years ago he was happy to help the DS-W1's young designer, Tetsuaki Aoyagi-now 28adapt the original optical-cartridge design to more modern technology.1 Lyra's Jonathan Carr also lent assistance. So did Aoyagi's father, Tesuji "Ted" Aoyagi, who was involved in the development of the optical mouse and joystick, and worked for Nakamichi when that company made turntables. (One of those turntables used an optical sensor to determine groove eccentricities and correct for them by shifting the platter top. We need that again!)

The DS-W1 looks like a typical moving-magnet or moving-coil cartridge-until you turn on its outboard equalizer-power supply, which makes the cartridge's "headlight" glow red.2 In this regard, the DS-W1 is similar to The Soundsmith's Strain Gauge cartridge, which also requires a dedicated equalizer and power source. The Soundsmith's outboard electronics are offered in different sizes and levels of refinement—and at different prices but the equalizer-power supply for the DS-W1 comes in one flavor only: a 12.7" by 8.2" by 3.7" (W x D x H) box with a power switch on its front panel and RCA input and output jacks on its rear panel.

An MC cartridge's relatively low moving mass offers advantages over an MM's heavier mass, and one of the optical cartridge's biggest advantages is the very low mass of its moving parts—even lower than that of an MC. The DS-W1 has neither coils nor magnets. Instead, attached to its cantilever is a tiny, 50µm-thick "slit plate," whose movement modulates a beam of light as it travels from an LED mounted in front of the miniscule plate to a photodetector behind it. Because that





Most of the specifications for the DS-W1 will sound familiar to cartridge shoppers: a recommended vertical tracking force (VTF) of 1.3–1.7gm, with an optimal setting of 1.5gm; a body of machined aluminum; a weight of 6.5gm; and channel separation rated—conservatively, I think—at 20dB "or more," which is a good 5dB lower than the specs for most MMs and MCs. The output is specified only in terms of equalizer output, which is 500mV or more, and designed to feed a line-level input.

movement is synced to the physical information in the groove, the voltage output of the photodetector is an analog of the music signal.

1 See my short interview with Tetsuaki Aoyagi at www.analogplanet.com/content/optical-cartridge-designer-inteviewed-analogplanet.com.

2 Garth Leerer of Musical Surroundings says this light inspired him and his co-workers to nickname the DS-W1 "the Night Rider," in reference to the pimped-up Pontiac TransAm from the mid-'80s television series *Knight Rider*. The principals of DS Audio were delighted when they heard that, and have begun using the name themselves. Life imitates art.—AD

### Velocity-proportional vs amplitude-proportional playback

Standard MM and MC cartridges are velocity-proportional: As electromagnetic devices, they produce output voltages that are proportional to the velocity of the stylus—the distance it travels per a given unit of time—and not the degree of its displacement in the groove. Such cartridges will exhibit flat response only when playing a groove modulation that was made with a constant velocity from the cutter head. (Creating constant-velocity modulations comes naturally by applying a 6dB/octave increase to the audio signal prior to master disc cutting, which is the RIAA emphasis, but read on.)

Optical and strain-gauge cartridges, on the other hand, are amplitudeproportional devices: Their outputs are (directly) proportional to amplitude ie, to the stylus's degree of physical displacement. The frequency response of an optical cartridge will be flat only when its stylus traces a constant-amplitude groove modulation.

In theory, record grooves can be cut with constant-velocity or constantamplitude modulations—the latter accomplished with electronic com-

pensation—though neither method is consistently practical in reality, due to the wide range of signal frequencies involved and other technical concerns. An exclusively constant-velocity cut. for instance, would result in enormous, space-wasting excursions at low frequencies and, at higher frequencies, excursions too small to be trackable and/or to rise above the noise floor.

The solution? Every record in your collection was cut using constant velocity and constant amplitude. Frequencies between 500.5 and 2121.5Hz, and a narrow "shelf" of the lowest frequencies below 50.5Hz, were cut with constant velocity. Yet, in keeping with the RIAA pre-emphasis curve, most of the bass range and all of the treble range were cut with constant amplitude, so that the low frequencies were attenuated and the high frequencies were amplified. That bass cut and treble boost are reversed by the RIAA de-emphasis stage in your home gear, to produce, ideally, flat response during playback.3

The reverse-equalization stage in your phono preamp is designed around the presumed standard in playback equipment: a velocity-proportional

MM or MC cartridge. Yet DS Audio's amplitude-proportional optical cartridge requires a much different and far less steep playback curve—which is why the DS-W1, like the Soundsmith Strain Gauge cartridges, comes with its own electronics. To produce flat output response, the DS-W1's equalizer must compensate in the two regions of the RIAA pre-emphasis curve where groove-cutting is constant velocity: between 500.5 and 2121.5Hz and below 50.5Hz. Above 2121.5Hz, the DS-W1 is not sensitive to the treble boost that a constant-amplitude groove—itself a product of RIAA preemphasis—would elicit from a velocityproportional cartridge. It's fair to say that amplitude-proportional cartridges perfectly decode, without electronic assistance, frequencies from 20kHz down to 2121.5Hz.

In fact, while the RIAA playback curve requires about a hundredfold difference in level (40dB) between the highest and lowest frequencies, the amplitude-proportional DS-W1 requires only a threefold difference in level (10dB). In other words, for the

3 For greater detail, including charts and graphs, see "Analog Corner" in the May 2014 issue, Vol.37 No.5.



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most part, amplitude-proportional playback inherently produces close to a flat response with little compensation needed.

That's just one of an optical transducer's advantages. In addition is something called Lenz's Law: In 1835, Russian physicist Heinrich Lenz stated, "An electric current induced by a changing magnetic field will flow such that it will create its own magnetic field that opposes the magnetic field that created it." In other words, in a standard MM or MC cartridge, the signal produced by the vibrating stylus and cantilever will be opposed by an electromagnetic force of its own making-a force that will, to some degree, inhibit the stylus's ability to faithfully track the groove. The DS-W1 does not suffer from this.

In short, amplitude-proportional cartridges seem to have three major advantages over velocity-proportional types: lower mass, no Lenz law electromechanical blowback, and less severe equalization. But I figured there must be some drawback to optical cartridges.

In preparing for this review, I contacted some people who know more than I do about vinyl cutting and play-

The DS-W1 uses the motions of a Shibata stylus to modulate the output of its externally powered light-emitting diode (LED).

back. All agreed that from 2121.5Hz to 20kHz, amplitude-proportional cartridges display exemplary behavior in the frequency and phase domains, and without needing any electronic processing during playback. However, there is a potential low-frequency problem in the sub-50.05Hz constant-velocity shelf.

As I've pointed out, from 50.05 to 500.5Hz, record-cutting is constant-amplitude, to save groove real estate—which makes sense, but requires compensation in playback because MM and MC cartridges will not exhibit a linear response when reading such groove modulations. However, the RIAA system's designers chose to revert to constant-velocity cutting below 50.05Hz by leveling-off the equalization and simply letting the cut-

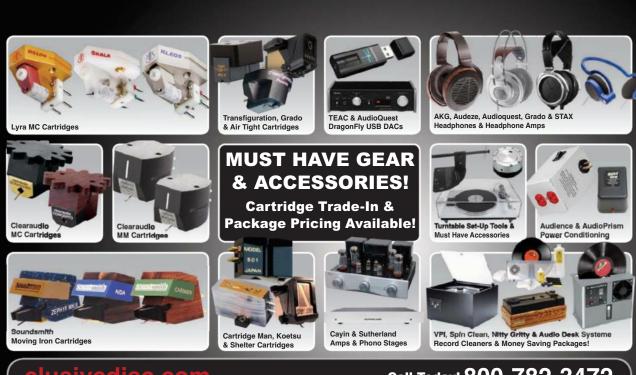
ter head do its thing and cut flat, with no filter imposed.

Why? Because, without that equalization, a velocity-proportional MM or MC cartridge produces a flat response from 50.05Hz down to the lowest frequencies. Had the RIAA opted for constant amplitude all the way down, that low bass would have required a 6dB/octave de-emphasis boost to maintain a flat playback response—which would also boost rumble and noise from the turntable's platter and motor.

When the DS-W1 reproduces frequencies below 50.05Hz, it naturally boosts response 6dB/octave in that region. That means its equalizer should effect a 6dB/octave cut to achieve a flat low-frequency playback response. However, my contacts told me that it's trickier to correctly implement such a thing.

### Theory vs Sound

What we learn from the above is that no system of vinyl playback works well, so we'd be better off switching to CDs. You can learn much the same online, where CD-resolution digital is described as simple and perfect: Nyquist is all you need to know, brickwall



filters are perfect, there's no such thing as jitter, and 16-bit resolution is more than sufficient—and never mind what happens at low levels.

But in the real world, for some crazy reason or reasons, my ears—and probably yours—prefer vinyl playback, finding that it sounds more musical. More like reality.

I mounted the DS-W1 cartridge in my Kuzma 4Point tonearm and plugged its output into DS Audio's dedicated equalizer. I compared it to the sound of an Ortofon A95 MC cartridge mounted in Continuum Audio Labs' Cobra tonearm, its output fed into Ypsilon Audio's MC-16L step-up transformer and VPS 100 phono preamp. Not including the prices of the tonearms, I was comparing the \$8500 DS-W1 rig to about \$41,500 worth of cartridges and preamps.

Especially if you've invested the latter sum in your analog front end, you'd expect and hope that the far more expensive combo would outperform the lower-priced one. But given the DS-W1's touted technological advantages, all bets would be off until the styli hit

the grooves.

If I expected a big "wow" on first hearing the DS-W1, I was disappointed—and that was a good thing: It's not likely that I've been enjoying my records incorrectly all these years. In fact, I didn't immediately notice anything much better about the DS-W1's sound except in one area: the bass. With every familiar record I played, I heard more bass than I expected or was used to hearing. The emphasis allowed the bass line to almost dominate the music. At first, the added rhythmic emphasis got my toes tapping and drove the music forward.

But a half-dozen records later, all that bass boost began to obtrude. It was like climbing into a rental car and finding that the previous driver had selected the "smiley-face" equalizer setting: boosted bass and treble—and, between them, a suppressed midrange. Not that the DS-W1 boosted the treble or suppressed the midrange, but it sure boosted the bass—and I don't have a tone control to drop it the necessary few dB.

Could it be the DS-W1 was getting the bass correct, and the Ortofon A95 was attenuating it? That's where digital came in handy: I compared some CDs with their vinyl counterparts—same mastering engineers and same source tapes, as in some Mobile Fidel-



ity SACD/CDs-and found that the A95's

bass more closely tracked that of the digital version. The optical cartridge's increased bass also was somewhat less well defined and coherent, with softer transients, though the bass's harmonic structure and tunefulness were very good. So I'm confident that DS Audio hasn't quite got the DS-W1's deemphasis right, or has chosen to boost the bass for its excitement value—the latter of which, if true, strikes me as an unfortunate choice.

That said, the DS-W1's excess bass rarely turned into midbass bloat. That makes me think that the problem had more to do with how DS Audio's electronics, in their present state, handle the equalization than with an inherent flaw in the cartridge itself.

If your system is bass-shy, the DS-W1 may be the quicker picker-upper you're looking for, but I don't think it's the correct way to balance a system's sound. Consider: The DS Audio preamp-power supply includes a subsonic filter, selectable by means of an auxiliary pair of output jacks, for "bent" (warped) records—but this didn't fix the bass excess.

Above that region of boosted bass, things were much better. The benefits of low mass and what I presume to be the absence of Lenz-effect blowback produced nothing less than revelatory transparency and spatial clarity, though those qualities were not immediately apparent to me, and the boron cantilever and Shibata stylus supplied an abundance of detail.

I've been going through the new

Digitization and reconstitution are fundamental, game-changing meat grinders compared to the effects of analog electronics.

boxed set of Roxy Music's *The Complete Studio Albums* (8 LPs, Virgin EGBSX 1), mastered from 24-bit/96kHz files. Of course, we'd all prefer that they'd been cut from the analog master tapes, but engineer Miles Showell at Abbey Road has done a thorough half-speed mastering that well matches the equalization of most of the original UK LPs, which were in no need of "modernization" or improvement. Unfortunately, the A/D and D/A converters used have made an audible signature on all of these reissues—something the original pressings don't have.

Yes, the electronics of analog tape decks, mixing boards, and cutter heads all affect a record's final sound, but digitization and reconstitution are fundamental, game-changing meat grinders compared to the effects of analog electronics. In any case, the DS-W1's retrieval and resolution of low-level details, and its inherent transparency, let me hear well into the farthest corners of such congested tracks as "The Thrill of It All," from *Country Life*. In that respect, the Ortofon-Continuum combo was not quite as good as the DSA-Kuzma. But overall I much pre-

ferred the Ortofon's rendering through the Ypsilon electronics, which was free of that distracting bass boost, and of the converter signature that, over time, became all too clear through the DS-W1.

### Two more observations

Sanctuary Records has just issued, from the Pye master tapes cut by Kevin Gray at Cohearent Mastering, the first four albums by the Kinks, including Ray Davies's early masterpiece Face to Face (LP, Pye/Sanctuary BMG 14051 V). It's a simple—some would say primitive—Shel Talmy mono production (was Talmy capable of any other kind?) that has never sounded this good-and I've got mint Pye originals. The tomtoms in "Holiday in Waikiki," and every element in the dreamy, hypnotic "Fancy," sounded far more threedimensional and resolved through the Ortofon A95. By comparison, the DS-W1 sounded somewhat glazed and less resolving of low-level information.

I also compared the DS-W1's and A95's renderings of "Cut Me Some Slack," Paul McCartney, Krist Novoselic, and Pat Smear's contribution to Sound City: Real to Real, Dave Grohl's vinyl ode to a Neve console (2 LPs, RCA 44992-1). Even though I was put off by the excess bottom end and slight electronic glaze of the DSA electronics, I became an instant believer in the optical cartridge's potential: The transparency, and the removal of a layer of haze, were startling and remarkable—as if someone had cleaned a camera's Lenz.

#### **Takeaway**

I spent a great deal of time with DS Audio's DS-W1 cartridge and electronics. The cartridge itself is a major breakthrough, held back from true audio greatness by distractingly overemphasized bass that is probably the result of flawed correction of the RIAA pre-emphasis, and mid-fi electronics that produced a slight glaze and somewhat flattened image dimensionality.

Had it not been for that off-putting bass emphasis, I'd have tried to compare the \$8500 DS-W1 with a similarly priced combination of cartridge and phono preamp, which would have been a fairer comparison than with the \$41,500 Ortofon-Ypsilon combo.

On the other hand, given the cost of a top-shelf cartridge and phono

preamp today, the \$8500 DS-W1 package is certainly worth an audition—especially if DS Audio can upgrade their electronics and fix the bass problem (and offer the fix as a swap-out for units in the field). In a bass-shy system, the DS-W1 as is might be a very hot ticket to analog ecstasy, but boosted bass from a phono equalizer is not my preferred method of audio transport.

Michael Fremer (fremer@analogplanet. com) is the editor of AnalogPlanet.com, a website devoted to all things analogical.

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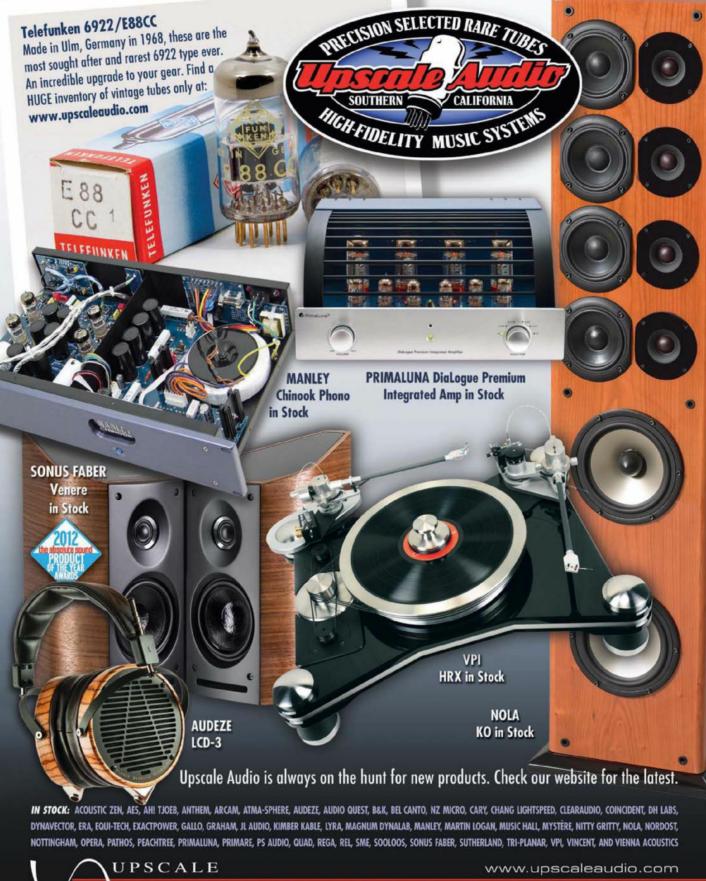
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**THIS ISSUE:** Getting the best from your audio system at little cost.

### Three Universal Tweaks

ur small hobby contains many even smaller subgroups, some of them openly hostile to one another—itself a partial explanation for the whole small-hobby thing. I have been a card-carrying member of some of those groups, have lurked at the edges of others, and have ignored only a few-most notably that community of manufacturers who believe that the surest way to make a better piece of playback gear is to make it bigger and heavier and more expensive than anything else on the market: a group sadly notable for its influence over much of the reviewing community. Those exceptions aside, almost every approach to domestic playback gear has, at one time or another, had at least some appeal, and I'm lucky to have learned something from many of them.

Remarkably, some of what I've learned from those individual groups is applicable to all of the others: universal truths, so to speak. Much of that information can be distilled into bleeding chunks

of hands-on advice on setting up, maintaining, and using a perfectionist-quality playback system. Here are three such tweaks—ones that I know, from experience, can benefit any good-quality hi-fi:



### PUT ALL OF YOUR SOURCE ELECTRONICS GEAR ON THE SAME PIECE OF FURNITURE, IDEALLY ON THE SAME SURFACE.

Some adherents to the Linn way of doing things will count this idea among the explanations¹ for why Linn's evergreen LP12 turntable works so well, and I believe they're right: By fastening the platter bearing, platter, tonearm board, tonearm, and phono cartridge to a rigid subchassis, by choosing materials for those elements with care, and by resisting the knee-jerk temptation to apply physical damping to one or more of those elements, the savvy user who optimally assembles an LP12 ensures that whatever air- or structure-borne vibrations affect one element affect all the others, to precisely the same extent, with no relative movement. That's important, because when those elements move relative to one another, recorded information is lost or garbled, with musical timing and momentum seeming to suffer most.

Less appreciated is the fact that, whenever it is possible to do so, it pays to apply the same philosophy to the entire playback system: Placing one's source components, preamplifier, and amplifier(s) on the same structure or surface ensures that they all perform in identical manner. Any vibration that affects one link in the chain will affect the others, thus preventing the miscues that can spoil the fragile illusion that takes place whenever electrically generated sound mimics music.

If your amplifier(s), or anything else in your system, won't fit on the same rack or table or credenza as your turntable,



your choices are three: trade in the offendingly large component for something of saner size; replace the supporting furniture with something similarly Brobdingnagian; or resign yourself to life with a physically unoptimized system. I believe you can guess the path that I would choose. (Hint: It's the one of the three that might also provide financial gain.) You may also wish to consider an extreme version that I consider only slightly crazy: Some hobbyists report an enhancement of playback quality after placing beneath each speaker or stand a sheet of wood similar or identical to the sort used in their equipment rack, plywood being the likeliest choice.

But that in itself leads us to . . .

### UNIVERSAL TWEAK NO.2:

### REMOVE ALL SPIKED FEET FROM YOUR PLAYBACK SYSTEM AND SELL THEM FOR SCRAP.

Before the howling commences, I acknowledge that many users who are cursed with poured-concrete floors, ratty wall-to-wall carpeting, wavy planking, warped floorboards, or cupped or rotting floor joists may be forced to use spiked feet, the flaws of which are surely outweighed by the drawbacks of wobbling, toppling speaker enclosures.

And in fairness: Restricting a speaker's ability to move is not the only purpose, real or theoretical, served by spiked feet. Spikes and cones are routinely described as "mechanical diodes" and promoted for their ability to direct vibrational energy toward or away from pretty much anything, the classic example being that of high-tech cones that are engineered to drain energy, surely unwanted, from a loud-

RT DUDLEY

<sup>1</sup> That's not to say that I buy the notion that this concept motivated the LP12's design. For various reasons, I suspect that *explanation for* is closer to the truth than *concept behind*.

speaker into a floor. Within the past 20 or 25 years, we audiophiles have been conditioned to understand that said energy will travel only in whatever direction the point is pointing—just as we understand that our music travels in whatever direction the arrows on our interconnects and speaker cables point (and forget that it exists as an AC signal).

I admit: I have long been skeptical of the spike-as-mechanical-diode effect described above. And *yet*—John Atkinson's own experiments in the 1980 and 1990s<sup>2</sup> suggest that that effect is quite real. It seems that my skepticism—a product of the rhetorical question "Since nails have been around since at least the Crucifixion, why did perfectionist audio not discover their usefulness until the 1980s, which was more or less the time we learned that treble, midrange, and bass notes prefer to respectively travel through treble, midrange, and bass wires?"-has been misplaced.

So I accept that energy can be persuaded, with the aid of spikes, to journey from a loudspeaker into a floor, or from an amplifier into a glass-and-steel rack, or from a tonearm into a tonearm board. But now I have a newer, simpler question: *Why?* 

I mean: Since the dawn of what we now, regrettably, call high-end audio, numberless copywriters have hailed the abilities of this or that new product to couple or decouple or damp or stabilize or demagnetize or whatever else. And because those things are always being done to products that used to sound great but now sound fussy and edgy and airy and lacking in color and richness and substance, I can't help wondering: "Why? What makes you think that's a good thing, let alone a necessary thing?"

Yes, points and spikes and cones have an audible effect on the sound of a playback system. In my experience, there are few things that *won't* affect the performance of a complex electronic or electromechanical device<sup>3</sup>—and any change in the interface between such a product and its surroundings will probably be audible, especially in the context of a very high-resolution, wide-bandwidth system. Yet one must ask: Do those changes represent improvements in performance—or are they just *changes*?

And while I bow to no man or

woman in my enthusiasm for speaker cabinets that remain motionless while their individual drive-units do all the vibrating, I believe the scenario cries out for a dose of common sense. It is, in my opinion, silly to worry about the minuscule degree to which unseen cabinet movements diminish or blur the excursions of treble and midrange drivers when, at the same time, those drivers are observably more vulnerable to intermodulation from the bass driver(s) bolted to the same baffle. What do spikes accomplish for such a loudspeaker? If anything, such mounting will free the bass driver to add even more energy to the outputs of the higher-frequency drivers.

But hey—don't dump your spikes on account of some theory that purports to explain a phenomenon you can't see. Get rid of them because your system is likely to *sound* better without them: less fussy, less hi-fi, more natural, and more like music. Ditch the spikes and, in their place, adhere to the feet of your stands or to the bottoms of your

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<sup>2</sup> See www.stereophile.com/features/806/index.html.

<sup>3</sup> The position of the stars at the time of the designer's birth is one of those few.

speaker enclosures a set of nice, thick, self-adhesive felt pads. The lossiness of the felt is usually sufficient to make up for any unevenness of your floor-or minute differences in the lengths of the legs of your stand or rack—and the pads will both protect fine wooden floors from medieval torments and make it far easier for you to adjust your speakers' positions. You can give up spiking and still be an audiophile. And if you find you preferred the sound of your system with a full complement of spikes . . . well, you can always reinstall them, easy-peasy, and the rest of us won't think less of you for it.

### UNIVERSAL TWEAK NO.3:

BUY A SINGLE, SIMPLE, DECENT-QUALITY POWER STRIP, AND PLUG INTO IT EVERY PRODUCT IN YOUR SYSTEM.

If Universal Tweak No.1 has one foot in the Linnosphere, Tweak No.3 owes a debt of thanks to the folks at Naim Audio. From its beginnings, Naim has flown the flag for star-grounding, whereby an amplifier or preamplifier has within it one preeminent signalground point, to which all its component parts are tied directly, through



connections of similar length and impedance and without shortcuts. The reason is simple: Although an ideal ground is a point of zero potential, unless care is taken, with multiple ground points, the voltage at one ground may be higher than the voltage at another—and the current that will consequently flow between the ground points exists as noise.

Early in their existence as a manufacturer of amplification separates, Naim took that concept a step deeper into Audioland and designated the ground point within an *outboard* preamplifier power supply as the central signal-ground point for a complete Naim-based system—hence the com-

Unplugged but plugged into: an AV Options SuperWiremold Deep-Cryo power strip with a single Wattgate-terminated AC cord in place.

pany's famous insistence on driving the power amp with a signal picked up at that power supply instead of at the preamp itself.<sup>4</sup> Similar attention has been given to the obviously related matter

of mains grounding within a Naim system: In the late 1980s, some of Naim's UK dealers began experimenting with a modification that earned the informal and unabashedly Ian Fleming-esque name Hydra. They gathered up the AC cords in an exemplary Naim-based LP-playing system—turntable power supply, preamplifier power supply, and power amp(s)—then cut off their plugs and connected all those cords to a single and presumably hefty AC plug.

4 Of course, this arrangement required special Naim-made interconnects that carried both AC and DC, which itself served a secondary purpose: Those cables, included free with Naim's preamps and otherwise unabashedly affordable, shield the user from the temptation of jumping on the megabuck-cable merry-go-round.

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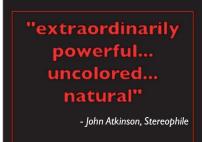
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The Hydra met with success among the UK faithful—but reportedly, for whatever reason, it didn't sound so hot over here. Consequently, Naim's then US distributor, Naim North America, began searching for the next best thing: a high-quality, non-current-limiting power strip with low electrical froufrou factor. In about 1995 they found such a thing in Wiremold's L10320: a nine-outlet, 15-amp power strip that came complete with nothing: no switch, no light, no circuit-breaker, no metal-oxide varistor, no fuse. Naim NA actually began distributing Wiremold L10320s to their dealers, and Naim enthusiasts on this side of the Atlantic embraced them. So, too, did many of us who appreciate the musical and sonic hallmarks for which Naim is known, but who use electronics from other manufacturers.

Although it appears the Wiremold L10320 is no longer in production (Wiremold was acquired by the French manufacturer Legrand in 2000), some claim that stocks remain plentiful, and similarly simple products can be found—all for under \$100, and most for considerably less. These products work! Put one at the heart of your system and you'll hear subtle but real reductions of noise: Music will seem more present and colorful, and the silences between notes will seem less like something and more like nothing. I'm less certain about the benefits, often claimed by the faithful, of imposing on one's components a particular order of plugin, typically giving pride of place—at the end of the strip nearest the strip's own AC cable—to products presumed to draw the most current. I've experimented along those lines without reliably hearing a difference, but I nevertheless go along with the game, if only because it's easy and free.

### Stripped of all noise

Universal Tweak No.1 can cost as little as nothing, though I suppose there are hobbyists who, lacking a *perfect* piece of furniture on which to place their hi-fi gear, will feel compelled to buy something new. (I suggest plywood or hardwood—but never softwood, such as pine.) Universal Tweak No.2 might compel the audiophile to spend a few dollars on felt pads, though he or she might also show a profit on the scrap value of all those spikes. Universal Tweak No.3 will cost under \$100.

Yet I'm reminded that there are people—not only here in the West, and certainly not only audio enthusiasts—whose nature it is to disregard products or procedures that cost too little. To those hobbyists I recommend, sincerely and without cynicism, a variation on Universal Tweak No.3 that requires a bit more money *and* delivers on its promise.

From AV Options—which sprang from the ashes of Naim North America and is the authorized US service center for all Naim Audio productscomes the SuperWiremold Deep-Cryo power strip (\$399), which is precisely what its name describes: a Wiremold L10320 to which a few enhancements have been applied. According to Chris West of AVO, the SuperWiremold begins life as a stock L10320 strip, then is subjected to deep-cryogenic treatments at -320°F-"fundamentally for improved conductivity," West says. "The deep cryo is done here in the US. And it's not just a matter of getting something to a deep temp: It's doing it under very controlled circumstances. This process brings [the strip] back up in stages, taking 36 hours altogether."

Additionally, the Wiremold's AC cord is retrofitted with a Wattgate 5266i AC plug—both cable and plug also get the deep-cryo treatment—and its aluminum case is mounted on a plinth of solid, hand-finished maple that's 16" long by 3.5" wide by 1.75" high, fitted with four silicone-rubber AcoustiFeet from Acousti Products. The wooden base, according to West, "isolates the unit, gets it away from the floor, and damps it a little, too."

The very first recording I listened to with the AV Options strip in place was a limited-edition (1982) MoFi UHQR LP of the Beatles' *Sgt. Pepper's Lonely* Hearts Club Band (Capitol/Mobile Fidelity Sound Lab MFQR 1-100): a mint copy of a virtually perfect stereo mastering of an überfamiliar landmark recording, elements of which suffer the dulling and compression effects of the Ping-Pong-ing of individual tracks. As I recently observed of another hardware upgrade, replacing my stock Wiremold L10320 with AVO's SuperWiremold Deep-Cryo strip was very much on a par with going from incorrect to correct absolute polarity for a given recording: Blurring of which I hadn't been consciously aware was lessened, voices and solo instruments stepped forward in the mix, and the sound as a whole seemed just a tad louder.

In the days since installing the AVO strip, I've heard it make the same refinements in other recordings: the changes are always subtle, but always unambiguously for the better, in terms of both musical qualities and sheer sound. Not bad for a \$399 tweak that takes less than five minutes to install. Incidentally, the folks at AV Options

point out that Wiremold's original outlet spacing is geared more toward traditional North American AC plugs than the extra-large, hospital-grade plugs from Wattgate *et al*; in systems in which all the AC cords are terminated with the latter, the nine-outlet AVO strip can accommodate a maximum of five plugs.

#### **RURAL FUN DELIVERY**

In announcing three summerly new vinyl releases, Bob Irwin, of the LP-and CD-reissue company Sundazed Music, also introduced a brand-new imprint: Sundazed RFD will specialize in 7", 45rpm releases of original pop music from Irwin's new home base of Nashville, Tennessee. All Sundazed RFD releases will be packaged in full-color, collector-friendly picture



Yellow Shark Country: The first 45rpm single by the SloBeats featuring Kenny Vaughan, on Sundaged RFD

sleeves, and Irwin, who may be the music industry's nicest, most earnest inhabitant since Ahmet Ertegun, suggests that all RFD records will be released on colored vinyl. These first three are gold—actually, a deep shade of translucent yellow reminiscent of Bono's sunglasses.

The first three Sundazed RFD singles are: the Greg Martin Group's "Groovy Grubworm" (b/w "Scratchy"), bandleader Martin being of Kentucky Headhunters fame (mono, RFD 2014); an up-to-date cover of the Herb Alpert hit "The Lonely Bull" (b/w "Bullseye!"), played with warmth, skill, and verve by Bob Irwin's own East Nashville Teens, featuring members of the Pluto Walkers and Los Straitjackets (mono, RFD) 2015); and "Shark Country" (b/w "Burton's Move"), by the ŚloBeats, led by guitarist extraordinaire Kenny Vaughan, of Marty Stuart's Fabulous Superlatives (stereo, RFD 2016). All

three are spirited guitar romps of the highest caliber, and each is captured in colorful, high-impact sound that leaps from the speakers like little else. Typical of Sundazed, the surfaces are gloriously free from noise.

My favorite of the three is "Shark Country": a punchy, surfy instrumental fueled by the clean but snarly sounds of Vaughan's Fender Jaguar, with beautifully deep, colorful, dexterous bass lines and the kind of retroinspired drumming for which so few

modern players have the right feel—served up in sound that's best described as purposeful stereo: the spaciousness and depth of two-channel with the punch and substance of mono. But "Groovy Grubworm" is not to be missed, with its dangerous bottom end—heft and impact in equal measures—and

its more modern, sustain-y guitar work, while the East Nashville Teens' reworking of "The Lonely Bull" is the sort of beautiful, poppy instrumental one might expect Marshall Crenshaw to cover, with a few unexpected twists and thoroughly great picking by all. Clearly, you need all three—eminently doable, given that each single costs only \$8.98. And because Sundazed has a better distribution network than most US-based vinyl specialists, all three should be at your local record store by the time you read this.

Art Dudley (art.dudley@sorc.com) tweaks his system in bucolic upstate New York.

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The piano's first arpeggio was as deliciously physical as with the best amplification I've heard. The system's sense of momentum, with the Jadis, was just about perfect, and dramatic peaks sounded easy and human. Absolutely lovely. The music rocked, and sounded both tuneful and impolite, as hoped. The electric bass sounded almost perfect: just the right color, tautness, touch, and rhythmic aplomb.

The Jadis sounded magnificent... the I-35 delivered every bit of the presence, tone, and texture that I would hope to hear from a contemporary tube amplifier: no small feat in itself. The I-35 amplifier looks beautiful and made music in a manner that would seem to guarantee it a place among a hallowed few. This is a damn good amp for getting to the essence of music. The I-35 makes me want to hear more from Jadis-and I hope that I will. Life is short enough.

Art Dudley, Stereophile, January 2014,
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The Jadis I-35; 30 watts per channel pure class A integrated amplifier. Featuring all point-to-point wiring, full auto bias, and Jadis' new third generation custom in-house hand-wound transformers with their lifetime guarantee and ability to drive speakers from 1 to 16 ohms. Value priced at \$7,495.



PASSION, CRAFTSMANSHIP
AND MUSICALITY LIKE NO OTHER.

# AUDIO BY MICHAEL LAVORGNA STREAMS

THIS ISSUE: ML recommends three desktop systems.

### Nearfield Nirvana

It's not the pale moon that excites me That thrills and delights me Oh no, it's just the nearness of you.

> -"The Nearness of You," Ned Washington & Hoagy Carmichael

espite what big-box stores and lossy streaming services want to sell you, listening to music at your desk does not have to suck. In fact, for not a lot of dough, you can easily build a desktop system that'll feed your head with music's goodness—or, for a few grand, assemble a setup that rivals the big rigs. Add the right app and streaming service, and you'll have access to an everexpanding library of losslessly encoded music on top of the one you already own. The only caveat: Any of these systems will lead to musical distraction, which is a lovely place to be.

### **First Things First**

Before we jump into our systems, let's talk about your computer setup and one of the most effective accessories I've encountered: For controlling your computer-music playback, I recommend using Roon (\$119/year or \$499/lifetime), from Roon Labs. While there are too many wonderful things about Roon to get into here (see Jon Iverson's review in the October 2015 issue), suffice it to say that, bar none, Roon is *the* control app for music lovers. Roon can access your music library, whether it resides locally (on the

same computer where Roon resides) or on an external hard drive or NAS.

I also highly recommend getting a subscription to Tidal HiFi (\$19.99/month), a service offering losslessly streamed access to over 25 million tracks and counting. If you have both Roon and Tidal, the latter works within the former, making the distinction between your music and Tidal's as seamless as you'd like. This combo is a game-changer that offers great sound coupled with unmatched music-discovery possibilities. Once you dig in, you may never come out.

Last but by no means least, I consider IsoAcoustics speaker stands (starting at \$79.99) to be essential ingredients in getting the best sound from your desktop speakers. Beyond the obvious benefits of getting your speakers up off your desktop with just the right degree of backtilt, the adjustable IsoAcoustics stands offer effective isolation, improving bass response and image focus.

A few features are shared by all of the DACs I recommend here, beginning with the ubiquitous USB input. In each case, unless otherwise noted, you'll connect your computer to your DAC with a USB cable. Also common to all is the ability to handle PCM resolutions of up to at least 24-bit/192kHz as well as DSD. (PC users will have to download and install the DAC manufacturer's USB drivers to take advantage of high-resolution audio.) You can also pair all of the recommended DACs with headphones.

But my focus here is on the nearfield desktop frontier. Let's build!

### SYSTEM 1

### iFi NANO iDSD DAC + TANNOY REVEAL 402 = \$469 TOTAL

While System 1 is the least expensive system I recommend here, it delivers much more than you'd expect for its relatively modest price.

The iFi nano iDSD DAC (\$189) is a DAC and headphone amplifier powered by a lithium-polymer battery charged via the USB bus. iFi claims 10 hours of playing time for the headphone output, and the iDSD automatically enters charge mode when the battery runs down. About the size of a pack of cigarettes, the aluminum-bodied iFi has a USB input, a 3.5mm headphone jack, coax S/PDIF output, RCA line level outputs (which you'll use to connect to the Tannoys), Minimum Phase and Standard filters, and a volume/on/off knob.

The nano iDSD supports PCM resolutions up to 32/384, DXD, and



single-, double-, and quad-rate DSD: It's truly present- and future-proof. Taking care of the D/A duties is a Burr-Brown DAC in which, according to iFi designer Thorsten Loesch, "DSD remains DSD and is converted directly to analogue. PCM remains PCM and is converted directly to analogue." The iDSD's USB input is asynchronous: The DAC directs data flow, which



is thought to reduce jitter. iFi even includes all the USB and RCA cables you need to get going, as well as a travel pouch.

Each Tannoy Reveal 402 active speaker (\$280/pair) houses a <sup>3</sup>/<sub>4</sub>" softdome "Poke-Resistant" tweeter and a 4" custom high-efficiency mid/woofer, for a claimed frequency response of 56Hz–48kHz. Each driver gets its own

25W amp, and around back are an adjustable EQ setting (-1.5dB HF Cut / Neutral / +1.5dB HF Boost) and RCA and XLR inputs. There's also a volume control, which I left maxed, and a mini-jack for connecting a phone or portable player. When using this mini-jack, you'll want to use each speaker's Speaker Position switch to denote which side of the desk it's on. (When using the mini-jack input, you have to connect the two 402s together with the included stereolink cable.) Filling out the rear are an IEC inlet for the included power cords, and an on/ off switch with blue power LED.

The Tannoys' black cabinets comprise "an acoustically optimized injection molded baffle utilizing dense material for maximum acoustic performance. The baffle is mechanically secured to a vinyl laminated MDF cabinet construction which has a closed cell acoustic foam base." A slot port is located on the front-below the drivers—to permit placement close to the wall behind the loudspeakers. The active crossovers were custom-tweaked by Tannoy's in-house speaker guru, Dr. Paul Mills. Each Reveal 402 measures a desktop-friendly 9.5" high by 5.8" wide by 8.4" deep.

When, in July 2014, I reviewed the iFi nano iDSD for AudioStream, I used it in my main system as well as on my desktop, where I found its sound to be rich and full, with a lovely dimensional quality—the last something that often goes missing from the sound of DACs in this price range. The Tannoys were equally impressive, and damn fun to listen to. If you're a fan of rich, full-bodied, well-rounded sound, the iFi-Tannoy combo delivers in spades: These are bona fide boogie machines.

1 See www.audiostream.com/content/ifi-nano-idsd-dacheadphone-amp.

### SYSTEM 2

### PONO PONOPLAYER + ADAM PROFESSIONAL AUDIO A3X = \$1057 TOTAL

A bit of a curve ball: The PonoPlayer doesn't need a computer to play your music. Of course, it doesn't give you access to the world of Internet streaming, but some folks are more than happy playing music from their own libraries, and even happier when they can take some of that music on the road.

Neil Young's PonoPlayer (\$399)

houses digital and analog circuitry designed by Ayre Acoustics, including Ayre's oh-so-musical minimum-phase filter. If you've read John Atkinson's review of the Pono in the April 2015 issue,<sup>2</sup> or my review on AudioStream in January,<sup>3</sup> you already know that it's a superb DAC that comes close to Ayre's QB-9 DSD DAC at a fraction of the price, while throwing in a music server and headphone amp gratis. The Pono-Player attaches to your computer via its micro-USB input, for transferring files

to the Pono's internal 64GB of flash memory, or its MicroSD card capable of holding another 64GB, for a total storage capacity of 128GB. I prefer just dragging and dropping my files into the Player, and skipping the Pono app altogether.

Outputs include a 3.5mm headphone jack and 3.5mm analog output. But if you want to get the best sound

2 See www.stereophile.com/content/pono-pono-player-portable-music-player.

3 See www.audiostream.com/content/pono-player.





out of this portable player, go balanced, for which you'll need a pair of 3.5mm-to-XLR cables, to connect to the ADAM's XLR inputs. (I used a borrowed pair of Cardas Parsec interconnects.) What you'll hear when you go balanced is smoother, richer, more natural sound. The PonoPlayer supports FLAC, WAV, AIFF, ALAC, DFF, and DSF file formats. Its DAC is the ESS ES9018M, which can pass PCM resolutions up to 24/192, as well as single- and double-rate DSD. Playback control is handled through the Player's 2.5" color touchscreen, which some people find too small (but I'm not one of them).

The A3X active speaker hails from the pro-audio line of ADAM Audio GmbH. Each A3X (\$329/each) has a





4.5" carbon-fiber mid/woofer with a 1" voice-coil and—the star of this show— ADAM's X-ART (for eXtended Accelerating Ribbon Technology) tweeter, based on the famous Heil Air Motion Transformer. Each driver has its own dedicated 25W class-A/B amplifier, and each speaker has a single XLR and an RCA input. Around back are a Tweeter Level control, which you can dial in or out + or -4dB, and an IEC inlet for the included power cord. Claimed frequency range is 60Hz-50kHz. On the front of each A3X is a port, a volume control, and an on/off switch. The cabinet is 10" high by 6" wide by 7.5" deep and finished in matte-black vinyl with beveled edges at the top front. I think they're ruggedly handsome.

If you're anything like me, when

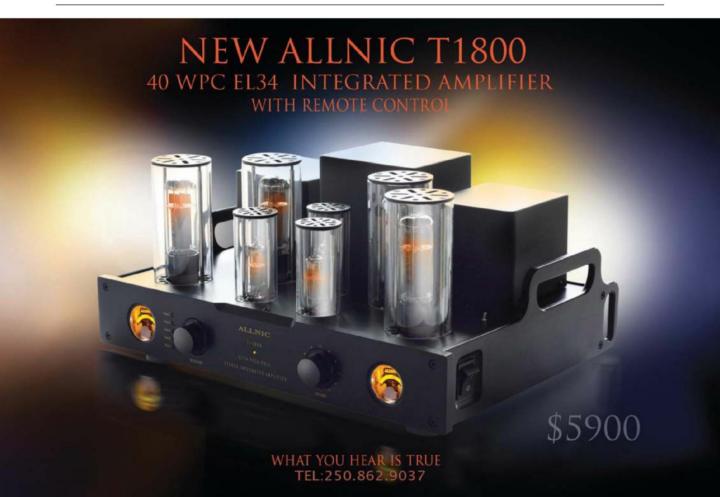
you first play music through a properly set-up pair of ADAM A3Xes, you'll smile that big "Holy crap!" smile. Largely due to the excellent dispersion characteristics of their X-ART ribbon tweeters, the A3Xes were capable of sounding as if the music they were playing was being made directly inside my head-like headphones, only better. There was nothing edgy about their sound: Coupled with the PonoPlayer's remarkable sense of ease and rich tonal qualities, we're talking highly engaging music reproduction. I've owned ADAM A3Xes for nearly three years, and use them every day with a Mytek Stereo192-DSD DAC (see System 3)—a combo I also recommend, assuming you don't care about portability.

# SYSTEM 3

### **MYTEK STEREO192-DSD DAC + DYNAUDIO EXCITE X14A = \$3495 TOTAL**

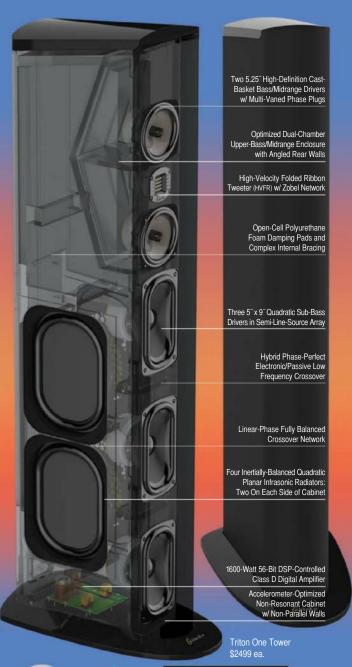
Hold on to your music-lovin' hat: This system is big-rig quality, scaled down to desktop size.

Mytek got its start in 1992 in professional audio, with a line of A/D converters; the Stereo 192-DSD DAC



# ColdenEar has Engineered Our New Triton One to Perform Like a \$20,000+ Super Speaker!

"... the mere fact that it is not unreasonable to compare the sound of the \$4999 (pair) Triton One with the sounds of speakers costing tens of thousands of dollars more per pair says a lot about their level of performance ..." - Robert Deutsch, Stereophile



"A Giant-Killer Speaker ... Borderline Class A"
– Stereophile Magazine

Stereophile's Recommended Components Class A rating is their highest and most coveted honor. This year, for Class A Full-Range speakers, there were 12 honorees, ranging in price from \$16,000 to \$200,000 a pair, with an average cost of \$54,000. The fact that of all the 22 Class B Full-Range speakers, only one, the \$4999 a pair Triton One, was singled out and praised as, "Borderline Class A", is a very unique and significant honor, totally confirming its unique stature and achievement.

"An absolute marvel ... Triton One shames some speakers costing ten times as much."

- Caleb Denison, Digital Trends

The Triton One is an evolutionary speaker that builds upon all the advanced technologies that have made the Tritons mega-hits around the world. This new top-of-the-line flagship was engineered to deliver even better dynamics and bass than the extraordinary Triton Two, along with further refinement of all aspects of sonic performance. How well have we succeeded? In the words of HD Living's Dennis Burger, the Triton One delivers, "... the sort of upper-echelon performance that normally only comes from speakers whose price tags rival a good luxury automobile".

Triton One "creates visceral, tangible waves of pure audio bliss" – Dennis Burger, HD Living

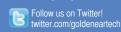
Great sound is what it is all about and the Triton Ones are, as HiFi+'s Chris Martens raved, "jaw droppingly good ... one of the greatest highend audio bargains of all time with a dazzling array of sonic characteristics that are likely to please (if not stun) the finicky and jaded of audiophiles". The Ones were specifically engineered to excel with all types of music as well as movies. Best of all, they offer previously unheard of value, as Brent Butterworth wrote in Sound & Vision, "I heard a few people saying the Triton One sounded like some \$20,000-and-up high-end towers, but I disagree: I think they sounded better than most of them". Darryl Wilkinson summed them up best, "A Masterpiece ... GoldenEar has fully ushered in the Golden Age of the Loudspeaker". Hear them for yourself and discover what all the excitement is about.



www.goldenear.com

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(\$1495), which hit the market in 2011, is their first consumer product. The DAC chip used is an ESS Sabre that can handle PCM resolutions up to 32/192 as well single- and double-rate DSD. The Mytek's host of inputs include AES/EBU, coax S/PDIF (RCA), TosLink, USB 1.1, asynchronous USB 2.0, FireWire 400 (six-pin), Wordclock (BNC), and unbalanced (RCA). Outputs include balanced (XLR), unbalanced (RCA), ½ "head-phone, and Wordclock (BNC).

The Stereo192-DSD offers a number of features, including: upsampling all PCM data to 192kHz, filters (PCM, sharp or slow rolloff; DSD, 50, 60, or 70kHz cutoff), volume-control mode (analog, digital, or bypass), volume trim levels (-14 to -18dB), Mute, Phase, summed Mono, L-R (subtracts one channel from the other), Mid Side (combines Mono and L-R), Dim Volume (cuts the output level by 20dB), Display (Brightness, Meters on/ off, Auto Off), and Remote (Enable, Address). Two user-programmable Function buttons can be set to control any of the aforementioned functions for quick access, and the LED display shows volume level and the current sample rate. For both Mac and PC users, Mytek requires the installation of custom drivers for USB and FireWire.

Dynaudio's Excite X14A speaker (\$2000/pair) is the active version of their well-regarded Excite X14.<sup>4</sup> Each X14A includes two 50W class-D amps, one for each driver. Dynaudio's proprietary drivers are a soft-dome tweeter and a long-throw woofer with

a cone of magnesium-silicate polymer (MSP). The X14A's claimed frequency range is 45Hz–23kHz, and its rearported, bass-reflex cabinet is solid as a rock. Each speaker measures 11.1" high by 6.7" wide by 10.3" deep and is built at Dynaudio's headquarters in Skanderborg, Denmark.

On the X14A's backside are three equalizer switches for adjusting the bass, midrange, and treble to suit your environment. The high-pass filter (switchable between 60 and 80Hz) is for using the X14A with a subwoofer, although 45Hz on the desktop is pretty full-range, in my opinion. There are an input-sensitivity switch (three levels) and an Auto On/Off button-or you can choose to leave the X14As on all the time. Also on the rear panel are the On/Off switch and the power inlet for the included power cord. The Excite X14A comes in a number of finishes, including real-wood Walnut and Rosewood veneers (lovely), and Satin Black and Satin White lacquers.

I connected my iMac to the Mytek via FireWire, and the Mytek to the X14As by means of an XLR-to-XLR cable. This combination offered the most full-range, engaging sound I've experienced on my desktop: refined, powerful, dynamic as all get-out, and as rich as music itself. The Mytek DAC is detailed yet not overly so, balancing incisiveness with body, and the Dynaudios are excellent all around, throwing out an all-encompassingly rich and physical sound. In a word, enchanting.

4 See www.stereophile.com/content/dynaudio-excite-x14-loudspeaker.

# It's Just the Nearness of You

There's an intimacy to sound reproduced at roughly arm's length, offering a different yet equally immersive experience as compared to traditional—farfield?—in-room listening. While I wouldn't say that one is better than the other, I will say that it's nice to have both. Variety is the spice of the hi-fi life.

While I'm tempted to bemoan how

much time we spend sitting in front of an impersonal soft-light information source, I prefer to make the most of it by using components that can deliver the power and beauty of music directly to my ears, and add the experience of art to an otherwise artless experience.

Michael Lavorgna (michael.lavorgna@audiostream.com) is the editor of AudioStream. com, a website for all things computer audio.

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#### iFi Audio

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#### IsoAcoustics Inc.

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MICHAEL JACKSON Thriller



MUDDY WATERS Folk Singer



ERIC CLAPTON Slowhand



LYNYRD SKYNYRD Pronounced Leh-nerd Skin-nerd



# MUSIC IN BY KALMAN RUBINSON ///THE ROUND

**THIS ISSUE:** KR renovates his primary listening room, starting with the audio components.

# This Old Listening Room

t has been a disrupted spring. Late last year, my wife and I committed ourselves to a long-needed renovation of our main living space: an apartment in Manhattan. Articles, books, and TV shows have illuminated the trials and triumphs of home renovation, but as far as I know, none has included a redo of the listening room of an obsessive audiophile, let alone one who is also an audio writer facing copy deadlines.

I'm more than a little lazy, and I had long-delayed much-needed system upgrades because of all the dreaded effort and disruption. But slowly I began to realize that this was an opportunity to make some long-planned changes in my system without losing the use of it for any longer than the renovation itself would require. I won't go into all the difficulties associated with plastering, painting, refinishing the floor, dealing with workers and contractors, and shopping for furniture. (As I write, the new couches have yet to arrive.) Instead, I'll focus on my list of audio to-dos: updating the AC wiring, replacing the equipment rack and main-channel cables, and shipping off essential components to be updated.

# **AC POWER**

A separate AC line at the front of my listening room has always been dedicated to the front-channel power amps and subwoofer. The only change needed there was to replace the outlets with Hubble hospital-grade receptacles. At the back of the room, however, the only power outlet was on a line that I'd thought was shared with two lamp fixtures—but testing revealed that this line is actually shared with the kitchen microwave and a plasma TV in the study, at the other end of the apartment. It was a no-brainer to take this opportunity to add two dedicated 20-amp lines, securely grounded to the building's 1/2" ground rod and fitted with Hubbles. I hoped that this would have a major impact on the sound, and sure enough: Hiss is now almost undetectable, and hum is nonexistent, even when I place an ear next to a speaker. I'm also confident that my system is now isolated from noise created by heavy-duty appliances.

### **EQUIPMENT RACK**

I'd always hated my equipment rack. When I began writing for *Stereophile*, in 1996, I replaced a tidy, traditional Target Audio rack with a stack of four double-wide Classic modules from Lovan USA. This gave me the eight component spaces I needed, but I was always unhappy about the crudeness of the Lovans and the flimsiness of their shelves, prompting my ongoing



efforts to reinforce and damp them. Replacement had long been overdue, and now that the impending renovation was already dictating the Lovans' disassembly...

I set out to find a more accommodating rack to provide a firm but adaptable foundation for all of my components. (Back in the day, who anticipated needing servers and DACs?) Not only that, the new rack would have to look good and not overwhelm the room, which also serves as our living room. Audiophile-grade equipment racks rightly emphasize rigidity, but they're often bulky and not easy to move or reconfigure. After weeks of browsing, online and in stores, I decided on a Synergy system from Salamander Designs. For some years, I've had a tall, narrow Synergy rack in

our weekend place, in Connecticut, and it continues to meet my needs there because it allows me to easily reconfigure its shelves whenever I get new equipment in for review.

I used the Design Your Own tool at Salamander's website to design a twinwidth S40 Core Module rack, in black finish with aluminum posts (\$999), which I customized with two pull-out shelves (\$89 each) and six Salamander Robot Feet (\$24.75 each), which add 3" to the height. The finished product measures 44.5" wide by 44" high, with spaces for 10+ standard-size components on 9 shelves, not counting the top shelf. I was a bit concerned about rigidity, since my tall, narrow Synergy rack in Connecticut, comprising a 39"high Extension atop a 21"-high Base Module, is no better than okay in that regard. I even anticipated adding to the new rack a set of steel cross-braces, but ended up not needing them: With its six substantial pillars of extruded aluminum supporting a lower, wider shape than that of the older Synergy rack, and its six big leveling feet sitting firmly on the reinforced-concrete floor, the new S40 Core Module rack is impressively stiff and rigid. Its fixed top and bottom shelves, and the adjustable ones in between, are deader and heavier than in my older Synergy rack, and the two pull-out shelves make it easier to access connectors. Online I found a clamp-on monitor mount for the LCD screen, which helps keep the top surface clear. As you can see from my photo, it looks good, holds everything, and can accommodate visiting review samples.

#### **CABLES**

I've often said that I'm not a cable fanatic. I never obsess about alternatives to the cables I'm already using. I need cables only to be well made, and well designed for the task.

But this was the time for change. My new rack is several feet farther away from the power amps and speakers than was the old, and my old interconnects were already at their



limits. Moreover, after decades of using only spade-terminated speaker cables snugged up with a trusty binding-post wrench from AudioQuest, I wanted the convenience of banana plugs for swapping out amps and speakers.

I called on *Stereophile*'s former assistant editor, Stephen Mejias, now at AudioQuest, to ask for his suggestions for replacements for AQ's Mont Blanc speaker cables (biwired) and Cheetah interconnects (XLR), which I'd been using for years. At first he offered to loan me several of AQ's top cables to compare, but I didn't want to make this a big project. How about some-



thing more modest, with reasonable flexibility? (I hate wrestling with stiff cables.) After a few e-mail exchanges, Stephen arrived laden with three Oak speaker cables with SureGrip BFA/ banana connectors (\$3040 for an 8' stereo pair; a third cable adds another \$1520) and three Earth balanced interconnects fitted with XLRs (\$4075 for a 10m stereo pair, plus \$2037.50 for the extra single), to swap for what I'd been using. The prices are pretty stiff for a guy who's not particularly interested in cables, but you can't do without cables, and these seemed commensurate with the value of the rest of the system.

AudioQuest's Oak speaker cables are configured for biwiring, with conductors arranged in a complex, double counter-spiral geometry, and insulation to which AQ's 72V (battery-powered) dielectric bias system (DBS) is applied. The split-tube banana contacts, of silver-plated beryllium-copper, fit so tightly into the amp and speaker terminals that I can just barely insert or remove them by hand. The Earth interconnects have conductors of solid perfect-surface copper in individual tubes of fluorinated ethylene propylene (FEP), arranged in a triplebalanced geometry; as with the speaker cables, a 72V DBS system is applied to the insulation. The connectors are plugs of high-purity red copper with hanging-silver plating (in which each part is clipped to a hanger and dipped in a silver bath).

Unfortunately, AQ has eliminated the latching feature on these XLRs. This is not a problem with the power amps, which don't move around and to which I have easy access—but things are crowded at the other end, back at the rack, and the cables tend to pull out when I shift the preamp to make other connections. This is a disap-

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# Al Schmitt

Chief Engineer - Capitol Records (Frank Sinatra, Barbra Streisand, Steely Dan, Yo-Yo Mah)

"I have been using Hafler for over 25 years and I have never been disappointed. The performance is outstanding, and the dynamics are just what I look for."



# *dynaco*\*

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pointment in such a product, which is otherwise impressively designed and made (and priced), but the inclusion of latches likely would have required the use of base metals stronger than the silver and copper AQ prefers. Because Stephen brought the new cables before I dismantled the system for the renovation, I was able to compare them with my old cables. The Earths sounded somewhat smoother in the treble, and noticeably more detailed in the midrange and bass. None of these changes was devastating, thank goodness, and all were positive—and anyway, new, clean contacts are always better.

# EQUIPMENT UPDATES AND UPGRADES

In recent years, much of what I've loved about my system has had to do with my exaSound e28 multichannel DAC and Baetis XR2 server: The former is the only DAC I know that will play all formats in up to 7.1 channels, while the latter, being PC-based, is flexible and updatable—and, used together, they are unique in the sound they deliver. The renovation project enforced a short separation that coincided with the release of the Mk.II

version of the e28 and the replacement of the XR2 with the XR3. I sent them off to their respective parents, George Klissarov and John Mingo; the upgraded e28 and the new XR3 were both sent a week or so later-yet they remained in their boxes until just recently: I've had only a brief time to become familiar with them. Moreover, the room is still incomplete acoustically-I'm not even sure where my new main listening position

will be—so it's still difficult to make assessments.

The e28 Mk.II adds these features to the original: automatic power-up after sleep, when playback is detected; user-adjustable power-down after a period of inactivity; a maximum-volume limiter when the output of the DAC is used to directly drive a power amp; a redesigned faceplate; the ability to extinguish the display light; and a 12V trigger output for power sequencing.¹ The Mk.II also adds MP3Safe

While there are many internal changes in the exaSound e28 Mk.II, the only external ones are a subtly more sculpted front panel and the 12v trigger jack on the back.

protection against clipping caused by faulty or erroneous signal data. In addition, Klissarov added the Femto-Master 82, a femtosecond clock, for super-low distortion. All of the e28's other wonderful features—including its ability to play virtually any audio format, galvanic isolation, jitter immunity, capable headphone amp, and heavy-duty, passivated European RCA connectors—are retained.

1 See www.exasound.com/e28/Overview.aspx.











The Baetis XR3 is unchanged in appearance except for the panel on the right of the rear panel dedicated to the isolated S/PDIF and USB outputs.

Because I rely on and appreciate the Baetis XR2 server as much as I do the exaSound e28, it was almost uncanny that the release of the XR3 also coincided with my system downtime.<sup>2</sup> New inside is the addition of a circuit board derived from Baetis's Reference Music Server. The S/PDIF signal passes through this proprietary circuitry to a BNC connector on the rear

panel without using either a USB or a PCI bus. Baetis claims this enhances two-channel S/PDIF performance by acting to: "a) substantially improve the digital signal wave form; b) increase voltage (amplitude); and c) reduce rise time—while also providing the necessary galvanic isolation." More significant for multichannel fans, Baetis has added a dedicated, fully shielded USB 3.0 port for best DSD performance.

I won't be able to assess what all of this might mean in terms of sound quality until the rest of the room and system are both finished. But for now, in my still-unsettled circumstances, what's clear is that the e28 Mk.II and XR3 work well and sound fine.

2 See www.baetisaudio.com/Baetis\_XR3.php.

# miniDSP U-DAC8 MULTICHANNEL USB DAC

In the July and November 2014 installments of this column, I reported on miniDSP's nanoAVR HD.3 Then called the nanoAVR 8x8, it was an extremely capable multichannel parametric equalizer (PEQ) in a conveniently small case, with three HDMI inputs and one HDMI output. (Its USB and Ethernet ports were for control only.) Since then, the nanoAVR line has been expanded to include the nanoAVR DL, which substitutes Dirac Live room correction for the PEQ, and the nanoAVR HDA, which adds an eight-channel DAC to the original PEQ. Both retain the HDMI ins and outs. Along the way, miniDSP also added to their line a physically larger EQ box, the DDRC-88A, with analog inputs and outputs.

Throughout all this, I had hoped that miniDSP would reconsider its I/O options. Using HDMI in/out meant that the nanoAVR had to be placed between a source component and an AVR or preamplifier-processor. Even adding the D/A to the miniDSP doesn't help the typical user, because AVRs and pre-pros generally do not have HDMI outputs that make use of their processing features: Their outputs are intended to feed a display without speakers, or, at best, stereo/compressed multichannel capability. The analogoutput version is all very well and good, but, unfortunately, none of the miniDSP devices have a USB music input so that the rising number of file servers could be supported.

MiniDSP has taken a big step in the

right direction. In the same tidy case as the nanoDVR, they now offer the U-DAC8 multichannel DAC. It offers no EQ at all, but at \$299 it is, by an order of magnitude, the least expensive multichannel DAC on the market. Nor are its specs anything to sniff at. PCM only, the U-DAC8 handles eight channels via its USB 2.0 input at resolutions up to 24-bit/44.1-192kHz, but not DSD. Its specs include total harmonic distortion of 0.006%, a dynamic range of 103dB, analog output impedance of 560 ohms, and a maximum output of 2V RMS.

Setting up the U-DAC8 is straightforward: connect the six to eight RCA outputs to your power amp or preamp, connect the USB input (inelegantly placed on the front panel) to your file server, and plug in the 5V wall wart. For Mac users, it is pretty much plugand-play since XMOS USB Audio Class 2.0—the USB protocol for HD digital transmission—is native to all recent Macs. One just selects "U-DAC8 Output (Core Audio)" from the Mac's dropdown menu of audio devices and performs a simple configuration using the standard Audio MIDI Setup page. On the other hand, Windows users must download and install the XMOS USB Audio Class 2.0 driver and run the U-DAC8 setup program: a process that is slightly more complex than on a Mac but still offers easy setup of channel selection, routing and level settings. (MiniDSP provides simple, detailed, illustrated instructions for both setup routines.) Because the U-DAC8 lacks a physical volume control and there is no easy pop-up onscreen software control, it should be connected to something that has such a control.

With the Manhattan system not yet resurrected, I installed the U-DAC8 in Connecticut, connecting it to my Macbased server—which itself runs Win7 via BootCamp—and the multichannel

3 See www.stereophile.com/content/music-round-67 and '/music-round-69.

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analog inputs of my Marantz AV-8801 pre-pro, in turn connected to a Bryston 9BST 5-channel power amplifier and newly purchased Monitor Audio Silver speakers: three Silver 8s for the left, center, and right channels, and two Silver 2s for surround left and right. I was immediately impressed with the clarity of the soundstage. And music sounded pretty clean across the audioband, with particularly good, tight bass. In contrast with the alternative configuration (HDMI from the server directly into the Marantz), the U-DAC8 seemed a bit lightweight but also more open. Of course, I could turn this statement around and say that the Marantz seemed a bit rolled off at the top, but sounded richer and warmer. When I switched in room-optimization software-Dirac Live on my server, or Audyssey in the Marantz-the differences shrank, but were still detectable in A/B comparisons.

What remained was a sense that the U-DAC8 was resolving more detail, but rendering it with a somewhat etched treble. Imaging, too, differed. While the U-DAC8 created a seamless surround stage, I felt that individual voices and instruments were not as



The miniDSP U-DAC8 is all-business at the back with 8 analog outs and a power connector. If you are look for the USB input, it is on the front.

distinctly placed as I would have liked. The Marantz was marginally better at this, but overall, I was happier listening to the miniDSP. During a short trip from Manhattan, the exaSound e28 was clearly superior to the U-DAC8 in detail, balance, and soundstaging-at about 12 times the price. In two-channel listening, the miniDSP's reproduction of the treble was also marginally less smooth than the Korg DS-DAC-100m's. And, consistently, the U-DAC8's slightly lower output required gain compensation in the downstream preamp, but remained entirely competitive in dynamics.

For \$299, miniDSP's Ú-DAC8 is an excellent way to begin listening to multichannel files. I felt that its lower output might be the result of

its 5V DC power supply and consequent choice of DAC chip, the AKM ĀK4440.4 This chip fits the task, but the XMOS USB asynchronous streaming port has greater potential, and miniDSP could bump up the U-DAC8 by inserting a 32-bit device with DSD capability. And, while I'm asking, why not piggyback a Dirac Live module, enhance the output stage, and move the USB port to the rear? For now, I'm keeping the U-DAC8 in the system because it's a distinct enhancement. I hope to turn it into a giantkiller by experimenting with USB links and alternative power supplies, and finding a way to get it to drive the power amps directly.

## **Next time in the Round**

I look forward to talking about the Marantz AV8802a, the new speakers in my Connecticut system, the sound of my completed Manhattan listening room, and, I hope, more.

Kalman Rubinson (STletters@sorc.com) combines a career teaching neurobiology with shuttling between surround-sound-outfitted homes in Manhattan and Connecticut.

4 See www.akm.com/akm/en/file/datasheet/AK4440EF.pdf.

# "Unbeatable Powered Bass"

Michael Fremer's Stereophile review of the original Model Seven loudspeaker lauded Vandersteen's flagship for its "unbeatable powered bass." Of course "unbeatable powered bass" isn't limited to the Model Seven (Mk II): Vandersteen's Model 5A Carbon and Quatro Wood CT are also full-range, powered-bass speakers with integral powered subwoofers and 11-band room EQ.

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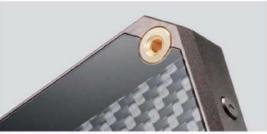














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of sorts, thanks to the many creative phases Wilco has gone through since he and Jay Farrar split up Uncle Tupelo in 1994. He's recently embarked on several side careers: as a record producer, helming two records by Mavis Staples, *You Are Not Alone* (2010) and *One True Vine* (2013); and as band member and touring mate, with his son Spencer, in the modestly named band, Tweedy. In addition to producing, Tweedy plays keyboards and rhythm guitars on *Still*.

"Have you heard the latest Mavis Staples record? That's a well-produced record," Thompson enthused. "That's a record that puts the artist at the front and center of their own project. Good thing. And he surrounds them sympathetically. I think he did the same thing on this record.

"We didn't talk too much about the actual songs. We didn't have to have a big fight there. He suggested some tweaks to some of the rhythms, or dropping verses here and there. And he added audio things. In 'Broken Doll' there are keyboards going on, which is great, very sympathetic to the song. More than anything else, he had the good idea of allowing me to bring my own rhythm section in, which I think is very good."

Thompson wrote the songs for *Still* in the three months before they began recording, at the Wilco Loft, in Chicago.

"I usually feel, if you write songs in a compressed period of time, they kind of belong to each other. They have a commonality. Sometimes there's a preponderance of a particular harmonic idea—there's something that, to me, seems to tie things together."

"So what's the link here?" said the straight man.

"I can't tell you or you'll see through my shallow construction. [mischievous grin] The window we had [to record] was nine days, we knew that going in. Eleven days would have been nice. I might have rethought a couple of things if I'd had the time. But then, you know, [if] you don't have the time, sometimes it's a good thing. Tweedy was perceptive enough to see what the project needed and who would be the best people to deliver that, and so the other musicians who came in were very fast learners.

"Guitarist Jim Elkington—maybe it's because he's English—he got my thing, whatever that is, really fast, and did just a great job, which saved me having to overdub an acoustic guitar here or



there, or to be a second guitarist myself. And Liam and Sima Cunningham had the brother-and-sister vocal connection. They picked up on my accent and phrasing very quickly, so they didn't sound like they came from Nashville or Memphis or something."

As has been the case for most of his career, Thompson says, Still was recorded on tape and not straight into the computer. "This is for Stereophile, and so I would like to stress that my record is in stereo [another grin]. If you have a stereo image . . . like the classical records I like best tend to be from the 1960s. Early stereo. They're recorded at, like, Watford Town hall in England, Sir Adrian Boult's conducting, and it just sounds fantastic. It just sounds so of a piece: lush, and brilliant. Sometimes digital can sound slightly unnatural to me. There's a little too much high, it's a little too shiny.

"We're basically putting down stuff live as much as possible. It was all recorded straight to 24-track and then put into Pro Tools after that. I like the combination of the two. If you go through Pro Tools [from the beginning], you need to warm up the signal somehow, so you either go through a nice old tube mixer or you master to ½"; you do something to get it warm.

"The nice thing about working to tape initially is that it just seems to blend better, it seems to mix better, and so bass and drums sound like they belong as a thing rather than having to spend a lot of time manipulating them into that state. For me, it's a more three-dimensional sound. There's more depth to the sound on analog, I don't know why. It's probably an audio illusion. To me, digital just sounds a little bit flat. You don't quite get the picture."

Speaking of recording on tape and production values, perhaps the only period in Thompson's long career that has provoked any controversy was a concerted push by then major label Capitol Records (now part of Universal Music) to make him a more mainstream

performer and enlarge his audience—a time that stretched from *Amnesia* (1988) to *Mock Tudor* (1999).

"When you ponder that period of your career now, what comes to mind? How do you feel about those records today?"

"The first thing I think about when I think about that time is fun. We had a lot of fun making those records. The second thing is maybe I should have put my foot down more, and said 'I'd rather have this than that.' [The push to make me a rock star] was absolutely happening at the time. You have a major label saying, 'You know, treat the drums a bit more, a bit more reverb, a bit more 'Born in the USA' snare drum, where's the single?, blah blah blah.' I think we had reasonable autonomy, but there was a bit of that."

Thompson's Capitol records, which did suffer from a bright and brittle early digital production style, were produced by Mitchell Froom, the keyboard player and surefooted producer who's produced over 60 albums, including Los Lobos' *Kiko* and his ex-wife Suzanne Vega's 99.9F°.

"Mitchell's great. He's a great musician. Sometimes I think, um, it's hard to spot what's special about what I do, if there is anything a'tall. A lot of it is cultural—the fact that I didn't grow up listening to the blues. I wasn't impregnated with the same music as most Americans, and actually most British people. I grew up listening to far more traditional Celtic and English music. And, in a sense, that should be reinforced rather than ignored. If I'd say anything about that period on Capitol Records, it would probably be that there was a de-emphasis of that. And kind of an attempt to drag it into the

"In a recent interview, you spoke of songs as being 'little capsules of emotion."

"Did I say that? What was I thinking? Please don't ask me to explain."

"Are they still?"

"I think so, yeah. I think a song is that. It's a three-minute emotional immersion—it should be. At the end of the song, you kind of blink, and the lights go up, and okay, that's it, on to the next one. Different emotions. Different feeling. It's extraordinary how powerful songs can be, how important songs are in people's lives, since Bob Dylan, for the last three generations anyway.

"It probably goes back to Stephen Foster, and hundreds of years of folk

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music, when a traditional song served many more functions. It was the news. It was about the latest battle. It was about what the lords in the manor up on the hill were gettin' up to: about the incest and whatever. It was a simple love song. And it was a song of social injustice. So you had all these emotions in this package. You can't say it was more important then than now however, because these days people are out with their iPods on, and what they're listening to is the soundtrack of their lives. I notice, with my kids, they don't say 'I'm listening to music,' they say 'I'm listening to my music.' So you choose this, this, and this off the endless menu. Songs speak for you, answer for you, say what you can't quite articulate."

Still includes a number of songs that will soon take their rightful places as classics in the proud Thompson canon, and none more rightfully than the admittedly gimmicky "Guitar Heroes," which reprises quotes from such famous string wonders as Les Paul, Hank Marvin, and Django Reinhardt, and has already become a staple of Thompson shows.

"It's not an original idea. I think it starts with a record by Thumbs Carllile. He played the guitar flat. He did a record called 'Springfield Guitar Social' in the '50s, where he apes all the Nashville guitarists, like Chet [Atkins] and also Les Paul. Brilliant.

"We did it as one thing, because we didn't want to chop it about every time we changed rhythm. We wanted to play through it, so I did it all acoustic. And then I thought I should really have more signature sounds going on, but we kept Django acoustic. For some reason, I kept Les Paul acoustic as well—I think I just liked what I played. But that should have been on a Les Paul."

For a guitarist forever associated with Fender Stratocasters, which Thompson has played since the beginning, recording "Guitar Heroes" was a chance to play other axes.

"At Tweedy's loft there's a large selection of guitars. Hundreds, hundreds of guitars. So you want a Les Paul? Well, what year do you want: '57? '69? What color? So that was easy. You know James Burton? Maybe a '50s Tele? Oh, that one up there. Just to get those sounds. Chuck Berry—a Super 400 Gibson or something like that. So that was fun, yeah. It's kind of a modular song, so if you get tired of the chords that you're playing, you can switch to other tunes by the same guitarist, or you



Richard Thompson and Jeff Tweedy.

can switch guitarist for guitarist.

"It can be adapted forever. I'll be living on this until I retire. I might want to get a little Charlie Christian in there? You could get Scotty Moore in, or something. Maybe Joe Pass—but then you try and play like Joe Pass, and good luck."

Another tune on *Still* meant to evoke a smile is "All Buttoned Up," in which an ardent suitor is making little progress in the arena of physical pleasures: "She wouldn't let me in / Frothing at the mouth and barking / on all fours like Rin Tin Tin."

"It's kind of slapstick. It's very much in the tradition of what in the UK they call the music hall, which was kind of variety theater. Like 1830 to 1930. Fantastic singers and comedians. People like Gracie Fields and Stanley Holloway were kind of the end. George Formby. 'I can't get away to marry you today, my wife won't let me.' It's very much in that spirit. It's kind of the battle of the sexes, but in a benign environment, a safe environment, a nonjudgmental environment, I hope. My wife likes that song, and she usually tells me if I'm being a sexist pig, so I hope I passed the test."

Thompson is also, thankfully, still writing rock tunes, which on *Still* are represented by "Long John Silver."

"I have a kinda subgenre [of song-writing], which is sort of Pirate Rock, if you like. There's a certain kind of traditional English tune any one of which could be the soundtrack to a pirate movie: 'He hums a jaunty tune!' It's got those kind of pentatonic tunes that we associate with the blues, but actually there's an English mode as well. And it has that kind of D-to-C-natural thing, that Scottish kind of chord change. 'Long John Silver,' to me, is that kind of thing with a kind of Rolling Stones mentality in the rhythm track."

Every songwriter has his or her established modes, and Thompson's best may be the love song. From worshipping motorcycles in "1952 Vincent Black Lightning" to hellcat girlfriends in "Valerie" to the fatal attraction and inevitable heartbreak of "Keep Your Distance" (memorably covered by Buddy and Julie Miller), Thompson has spent a career on this most ancient of song forms. On *Still* he adds "She Never Could Resist a Winding Road." He remains the master of the bitter-

sweet love song.

"That's the best kind, right? If you're gonna be a realist, then love is bittersweet. You can be all romantic-andflowers about love, and that's a syrupy kind of love song. But often, you love someone in spite of: Even though you do that, I still love you. Even though you're not a perfect human being, I love you. You have to write songs that reflect that, I think. 'She Never Could Resist a Winding Road'-there is someone very close to me who is just like that. They've just got itchy feet. So I get home off the road, and 'At last, you're home. Now we can go somewhere.' And I sort of love it. I love the spirit of it. The wanderlust.'

"How, at 66, still spending much of the year on the road the world over, do you manage to keep your songwriting productivity so high?"

"Well, the songs are three minutes."
"You still gotta write 'em."

"Yeah. The difficult thing is to write songs you haven't written before, and I don't perfectly do that. I do overlap. But what I tell myself, in defense of my own argument, is that I'm actually writing in a style, a genre, that didn't exist before. It's somewhere between popular music, or rock music, and traditional music from a UK perspective. Something that the Band did very well was to synthesize all the traditions of America and write new songs that sounded like they came out of that tradition. So I try and do the same thing. In a sense, I'm still trying to establish a vocabulary, and I'm hoping other people will take this vocabulary and use it to build their own tradition, because Britain needs that tradition. What we were doing in Fairport was trying to reconnect that tradition, and I'm still trying to do the same thing."

"And you still have lots of relevant, full-blooded things to say!"

"Except in interviews. I'm just completely dried up. Nothing. Nothing left. Drained. Dead." ■

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# **JOHN ATKINSON**

# GamuT RS7

# LOUDSPEAKER

anish manufacturer GamuT Audio's patchy history in the US includes a succession of distributors that failed to establish the brand here. But in 2014 GamuT tapped Michael Vamos to spearhead their own US-based distribution company, which is now energetically promoting the company's products. That change coincided with my auditioning, at the 2014 Rocky Mountain Audio Fest, of GamuT's two-and-a-half-way RS5 tower loudspeaker (\$31,900/pair). I was sufficiently impressed that I asked to review it—but then, at the 2015 Consumer Electronics Show, I experienced the RS7.¹ This was the GamuT speaker I wanted to spend some time with, and at the end of March, GamuT's R&D manager, Benno Meldgaard, joined Michael Vamos in setting up a pair of RS7s in my listening room.

#### **The Revised Superior 7**

Costing \$39,900/pair, the RS7 is basically the same as the RS5, but with a second woofer mounted above the tweeter on the sloped-back baffle, to complete a full three-way design standing just over 4' tall. The midrange driver is mounted several inches below the tweeter, with the first woofer below that. The woofers are loaded with two slightly flared, metal-lined ports, 2" in diameter, halfway up the narrow rear panel.

GamuT's RS speakers use proprietary Scan-Speak drivers, including a version of the high-performance, 1.5" ring-radiator tweeter that I'd first experienced with Mission's Pilastro loudspeaker, reviewed in December 2002.<sup>2</sup> The soft diaphragm is terminated with rubber roll surrounds not only at its circumference, as usual, but also at a central, stationary, sharp-pointed phase plug. A neodymium magnet is used to get high-enough sensitivity. The 7" midrange unit features a radially scored pulp cone 5" in diameter, this treated with what GamuT describes as a "proprietary blend of oils," and terminated with a substantial rubber half-roll surround. The two 7" woofers also have cones 5" in diameter, these made

from wood fiber, with flat wooden dustcaps.

The crossover frequencies are specified as 250Hz and 2.5kHz. According to Meldgaard, the slopes of the tweeter and midrange crossover filters are first-order "until they 'meet' each other; at this point [the slopes] begin to become sharper and sharper, in a very 'rounded' manner, to make sure the point of crossover is as invisible as possible." Unusually, the crossover between the midrange unit and the woofers doesn't have a series capacitor to filter the low frequencies from the feed to the former, which is connected directly to the amplifier. Instead, what GamuT calls "a combined serial and parallel crossover" attenuates low frequencies from the midrange-driver signal path. This design is said to avoid any of the phase errors, smearing, or delay that can be introduced by normal crossover designs. Electrical connection is via two vertically arranged pairs of GamuT's Stripped Wire terminals, one pair feeding the tweeter, the other the midrange unit and woofers. As the name suggests, these high-quality terminals accept bare wires; they also accept 4mm plugs.

The slender, elegantly profiled cabinet—from above, it resembles a truncated ellipse—is made in GamuT's own factory. The panels, which are up to 32mm thick, are formed from 21 layers of wood of different thicknesses, curved and glued in a mold, the glue then set using RF energy. This cabinet construction results in a rigid but relatively undamped enclosure, and follows the low-loss philosophy pioneered, for example, by Spendor in the 1970s: Instead of using heavy damping, which lowers the Q of resonances and might therefore make them more audible, the enclosure is left free to vibrate, its behavior then controlled with strategic bracing. Machined into each side panel are two wide, horizontal grooves, for what GamuT says is "optimized cabinet surface behavior."

There is no grille. Instead, two vertical stainless-steel rods

# SPECIFICATIONS

Description Three-way, four-driver, floorstanding loudspeaker with vented enclosure. Drive-units: 1.5" (29mm) ring-radiator tweeter; 7" (178mm) oil-impregnated, sliced-paper cone midrange unit; two 7" (178mm) wood-fiber cone woofers with wooden dust-

caps. Crossover frequencies: 250Hz, 2.5kHz. Frequency response: 28Hz-60kHz, ±3dB; 23Hz-60kHz, +3/-6dB. Sensitivity: 88dB/2.83V/m. Nominal impedance: 4 ohms. Minimum impedance: 2.7 ohms at 120Hz. Recommended amplifier power: 150-700W into 4 ohms.

Dimensions 50.4" (1280mm) H by 8.9" (226mm) W by 25.3" (642mm) D, all with plinth. Weight: 149.6 lbs (68kg).

Finishes Onyx (black), Ivory (white-oiled Ash), Maroon (dark brown with hints of red), Ruby (deep red). Serial numbers of units reviewed 41L, 41R.

Price \$39,900/pair.

Approximate number of dealers: undisclosed.

Manufacturer GamuT Audio, 6818 Årre, Denmark.

Tel: (45) 70-20-22-68.

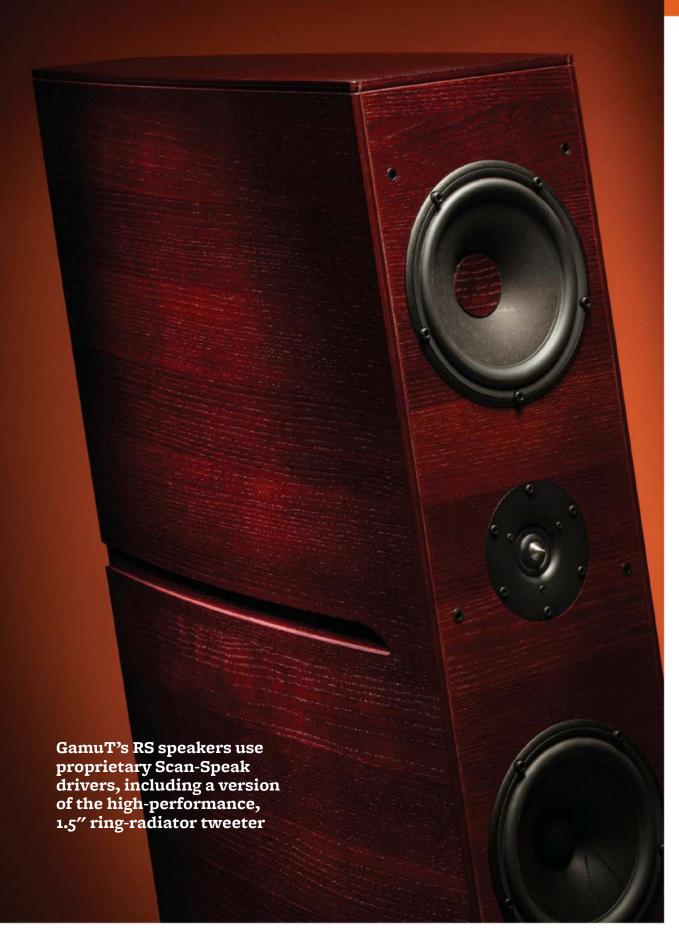
US distributor: GamuT USA.

Tel: (888) 252-2499.

Web: www.gamutaudio.com.

<sup>1</sup> See www.stereophile.com/content/gamuts-rs7.

<sup>2</sup> See www.stereophile.com/floorloudspeakers/736/index.html.



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flank the drive-units, these supporting 29 horizontal, fabric-covered rubber strings that offer no acoustic obstruction. The enclosure is supported on a massive plinth. The cross-over is mounted to the plinth, which comprises two oversize stainless-steel metal plates with a section echoing that of the top panel, the plates sandwiching what appears to be a plate of wood. Four stainless-steel spikes allow the speaker's vertical and horizontal tilts to be adjusted.

Overall, GamuT's RS7 offers a level of fit and finish commensurate with its price.

#### Setup

Optimizing speaker positions with a design that has widely spaced woofers is always a complex business. The goal is to maximize the differences between various critical dimensions—namely, the distances between those low-frequency drivers and the four closest boundaries: floor, nearest sidewall, front wall, and ceiling. GamuT offers a service in which their speaker customers can submit room dimensions and get back specific placement suggestions. In my case, I was fortunate enough to have Benno Meldgaard and Michael Vamos set up the RS7s in my room. (At this price level, this is something the dealer should do.)

I always learn something from watching an expert find the optimal positions for a pair of speakers. Starting from the positions where I'd found the KEF Blade Twos³—which preceded the GamuTs—to work best in my room, and using only one loudspeaker at a time, Meldgaard moved each RS7, listening as he went. Having found a position where the sound began to jell, he rocked the speaker from side to side and from front to back, listening for how the low-frequency balance changed as he did so. This led to small changes in position until he declared himself happy. The final setup was

slightly asymmetrical: the left RS7's woofers were 2' from the LPs that line the left-hand wall; the right RS7's woofers were 4' 6" from the bookcases that line the right-hand wall; the lower woofer of each speaker was 5' 9" from the wall behind it and 11' 4" from my ears.

Having determined the optimal placement of each speaker, Meldgaard then listened to both speakers, to determine the degree of toe-in to the listening position and the exact amount of backtilt for the baffle. The toe-in adjusts the high-frequency balance, GamuT recommending that its speakers be listened to 10–30° off-axis. In my room, the speakers ended up being toed in by 5°, which meant that my ears were about 15° off axis. With the degree of baffle backtilt Meldgaard had set, pink noise sounded a little hollow, the highs a little disconnected, when I sat with my ears level with the tweeters, which were 36" above the carpeted floor. Finding that slouching a little brought the low-treble region into better balance with the upper midrange, I later used the spikes to tilt each speaker back a little more.

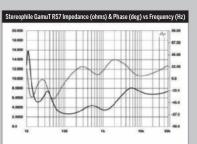
### Listening

The RS7s had a very open sound with clean, grain-free highs and a smooth, uncolored balance. Stereo imaging was precise and stable; dual-mono pink noise produced a narrow central image, with no broadening or "splashing" of that image to the sides at some frequencies. There was also more image depth than I usually hear, especially with the Bel Canto Black amplification system. Carol Wincenc's flute and the string trio in my recording of Mozart's Flute Quartet in D, K.285, from Serenade: Live at the Santa Fe Chamber Music Festival (CD, Stereophile STPH009-2), were unambiguously

3 See www.stereophile.com/content/kef-blade-two-loudspeaker.

## **MEASUREMENTS**

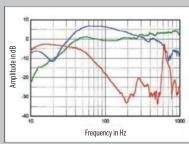
used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the GamuT RS7's frequency response in the farfield, and an Earthworks QTC-40 for the nearfield and spatially averaged room responses. Because the RS7 is large and heavy, I wasn't able to lift it onto a stand for the measurements; the reflection of its output from the floor thus occurred earlier than is usually the case with my published loudspeaker measurements, reducing the resolution



**Fig.1** GamuT RS7, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

in the midrange.

The RS7's voltage sensitivity is specified as 88dB/2.83V/m; my estimate was less than that, at 85.5dB(B)/2.83V/m. The impedance is specified as 4 ohms, with a minimum magnitude of 2.7 ohms at 120Hz. Fig.1 shows my measurement of the GamuT's impedance magnitude (solid trace) and electrical phase angle (dotted). The impedance remains below 5 ohms through the upper bass and the entire midrange, with a minimum value



**Fig.2** GamuT RS7, nearfield responses of: midrange unit (green), woofers (blue), ports (red).

of 2.66 ohms at 120Hz, this agreeing with the specification. Though the phase angle remains low throughout most of the audioband, this is still a speaker that will work best with amplifiers that have no trouble delivering enough current into low impedances.

The traces in fig.1 are free from any small discontinuities that might hint at the presence of cabinet vibrational resonances of some kind. Logistical difficulties prevented me from performing my usual accelerometer tests; however, listening to the enclosure panels with a stethoscope indicated that the cabinet was relatively inert, with only some low-level modes audible between 500 and 650Hz at points on the sidewalls level with the woofers.

The RS7's low-frequency behavior is complex, with significant overlap between the midrange unit and the two woofers. This can be seen in fig.2, which shows the sum of the nearfield responses of the woofers (blue trace),

and stably positioned in space with a precision I usually associate with high-performance minimonitors.

The <sup>1</sup>/<sub>3</sub>-octave, lowfrequency warble tones on Editor's Choice (CD, Stereophile STPH016-2) were reproduced with full weight down to the 32Hz band, which, as always, was exaggerated by the lowest frequency mode in my room. However, both the 25 and 20Hz warble tones were audible at normal listening levels, suggesting that the RS7 has excellent bass extension. The half-step-spaced tonebursts on Editor's Choice were reproduced very cleanly from the midbass

through the mid-treble, with good weight below 100Hz. My bass guitar in the channel-identification tracks on *Editor's Choice* was reproduced with impressive weight and attack, as was the bottom register of Bob Cranshaw's five-string electric bass on Sonny Rollins's *Road Shows: Volume 3* (CD, Okeh 88843 04998 2). But though some bass instruments benefited from the boost supplied by the 32Hz mode in my room, it was too much of a good thing with Darek Oles' double bass on the Mike Garson Trio's *Wild Out West*, the instrument sounding too rich, too dominant in Jim Merod's mix (16/44.1 ALAC files ripped from CD, BluePort BP7022).

Even so, the RS7's persuasive way with electric bass had





**Left:** GamuT's stripped wire terminals accept bare wire as well as banana plugs. **Right:** Two metal-lined reflex ports sit above the terminals.

me reaching for an album I hadn't played in years: Peter Gabriel's Secret World Live (CD, Geffen 20642 47222). In the chorus of "Digging in the Dirt," bassist Tony Levin plummets from E-flat (39Hz fundamental) to a root-of-theuniverse C (32Hz)-which the GamuT speakers, driven by the MBL Corona C15 monoblocks, handled without breaking a sweat. Inspired, I cued up this live album's version of "Solsbury Hill." I hadn't realized before how this song—surely the only song in 7/4 time to become a mainstream hit-switches

between measure fragments in 3, then 4, for the introduction, and 4, then 3, for the verse. How the heck did anyone dance to this track without falling over their feet? As well as cleanly decoding the time signature, the RS7s kept distinct the different voicings Levin used on his bass throughout this track, and kept them well differentiated from the similarly pitched kick drum.

But it was when I listened to "Don't Give Up" from this album, with Levin's double-stopped ostinato riff, that I became aware of just how much clarity the RS7s offered in the bass. The bass chording sounded clean and superbly well defined, with no ambiguity of pitch. In fact, it took me

# measurements, continued

the sum of the nearfield port responses (red), and the nearfield response of the midrange unit (green), all plotted in the ratio of the square root of the radiating areas. As suggested by the saddle centered on 20Hz in the impedance-magnitude trace, the ports are tuned to this low frequency, which is indicated by the minimum-motion notch in the woofers' output at that frequency.

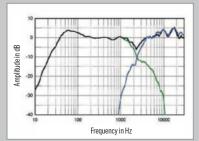


Fig.3 GamuT RS7, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with: farfield tweeter response (blue), farfield midrange-unit response (green), complex sum of nearfield responses plotted below 300Hz (black).

The output of the ports rolls off above 50Hz, but is disturbed by a major resonance peak at 605Hz. I could hear this resonance from behind the speaker with pink noise; fortunately, the ports face away from the listener, minimizing the resonance's audibility at the listening position.

The woofers' response peaks broadly in the midbass, this partly an artifact of the nearfield measurement technique, and crosses over to the midrange unit close to the specified

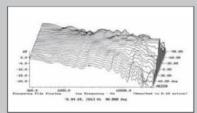


Fig.4 GamuT RS7, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

250Hz. However, the midrange unit's output continues for two octaves below the nominal crossover frequency. Its cone was undergoing significant excursions even at 20Hz.

The black trace below 300Hz in fig.3 shows how these nearfield responses sum at a nominal farfield point. Again, the broad peak in the midbass will be due to the nearfield measurement technique, and the speaker rolls off in the low bass a little earlier than the low tuning frequency of the ports had led me to expect. Above 300Hz, the black trace shows the farfield response averaged across a 30° horizontal window centered on the tweeter axis, but with the speaker's front baffle tilted back, as Benno Meldgaard had set it up in my listening room. The midrange is flat, as is the treble, though the top octaves are slightly boosted. However, there is a well-defined suckout centered close to the upper crossover frequency at 2150Hz. Looking at the individual outputs of the midrange unit (green trace)

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From left to right: The premium ScanSpeak ring-radiator tweeter; the high dynamic-range midrange unit; one of the two woofers, with its wooden dustcap.

a while to cotton on to the GamuT RS7's capacity for wide dynamic range, and its concomitant ability to play loudly without strain, provided the amplifier could keep up with its demand for current. When I played—loud—"Straight No Chaser," from the Ginger Baker Trio's Going Back Home (ALAC file ripped from CD, Atlantic 82652-2), the RS7s again driven by MBL monoblocks, Baker's drums had enormous low-frequency impact, yet were well differentiated from the sound of the late Charlie Haden's double bass.

At the other end of the audioband, even after I'd tilted the baffles back a little more, the RS7's high treble was stronger than that of the KEF Blade Twos, which can sound a little mellow. This was a benefit with naturally miked recordings—Billy Drummond's cymbals in "The Mooche," from the Jerome Harris Quintet (16-bit/44.1kHz ALAC file from CD, originally released on *Rendezvous*, Stereophile STPH013-2, now available only on *Editor's Choice*) sounded

exactly as I remembered them sounding in 1998, when I made this recording in Chad Kassem's Blue Heaven Studios, in Salina, Kansas. However, the RS7's forthright treble range could make the sound a touch relentless with modern, compressed recordings—such as *River*, a recent album from French-Cuban duo Ibeyi (Tidal stream from CD, XL Recordings). Like so much indie rock I hear these days, this album may be musically valid, but it sounds threadbare. Call me an old fart, but when I listen to Paula Cole's sympathetic answering vocal in "Don't Give Up," from Peter Gabriel's *Secret World Live*—well, *that's* how I want close-miked female rock singers to sound, especially with the sympathetic nature of the RS7's midrange and its clean highs.

I've done a lot of choral recording over the past decade, and with choirs heard live, there's a point where the sound starts to overload the acoustic of the performing space. There's little the recordist can do about this other than to

# measurements, continued

and tweeter (blue), it appears that one or both of these drivers is rolled off a little too early for their outputs to add optimally in the crossover region, at least on this axis.

The RS7's plot of horizontal dispersion (fig.4) does suggest that the effect of this suckout decreases to the speaker's sides, which is probably why Meldgaard set them up toed in only 5° to the listening position. The contour lines in this graph are respectably uniform, while the fact that the ring-

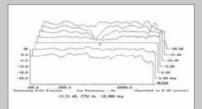
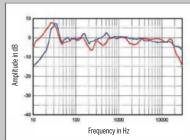


Fig.5 GamuT RS7, vertical response family at 50", normalized to response on tweeter axis, from back to front: differences in response 20-5° above axis, reference response, differences in response 5-10° below axis.

radiator tweeter becomes relatively directional above 10kHz—something I've found with other speakers using this drive-unit—will offset the excess of energy on axis in this region. In the vertical plane (fig.5), again measured with the front baffle tilted back, the crossover-region suckout deepens above the tweeter axis, which is 36" from the floor with the speaker on its spiked plinth. As I found in my listening, increasing the backtilt of the baffle



**Fig.6** GamuT RS7, spatially averaged, ½-octave response in JA's listening room (red); and of KEF Blade Two (blue).

or slouching in my seat gave a slightly more immediate-sounding, betterintegrated balance.

According to Meldgaard, GamuT does its measurements at the seated listening position, between two speakers—not in front of just a single speaker. In my listening room, the RS7s' spatially averaged response — measured for each speaker individually in a rectangular grid 36" wide by 18" high and centered on the positions of my ears, using SMUGSoftware's FuzzMeasure 3.0 program and a 96kHz sample rate—is shown as the red trace in fig.6. For comparison, the blue trace in this graph is the in-room response of KEF's Blade Two, taken under identical conditions when I reviewed it for the June 2015 issue.1 Overall, the KEF's room response is more even from the upper bass through the top octaves, but it's fair to say that the GamuT's balance would have been close to the English

1 See www.stereophile.com/content/kef-blade-two-loudspeaker-measurements.



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use microphones and A/D converters that don't exaggerate the acoustic intermodulation. This is also true of the playback equipment: Many speakers add their own layer of nonlinear behavior to whatever already exists in the recording. Though its top octaves were present in full measure, the GamuT RS7 stepped neatly out of the way with choral recordings, the speakers refraining from editorializing in this or any other manner. That Scan-Speak ring-radiator tweeter is something special.

As I mentioned in my review of Ayre Acoustics' MX-R Twenty amplifier in August, I found myself listening to a lot of piano recordings with the GamuT RS7s in my system. When I was preparing Margaret Graham's review of engineer Peter McGrath's recording of Ivan Davis performing Schumann and Liszt (CD, Audiofon 72004), to be posted on the Stereophile website as one of our "Recordings of the Month" for September 1982,4 I was reminded that, some years back, McGrath had given me 24/96 WAV files of a Leonard Shure performance of Schubert's Piano Sonata in B-flat, D.960, which he'd digitized from the analog originals (CD, Audiofon CD 72010). The sound of these files through the RS7s had a glorious liquidity in the midrange that allowed both the lyricism and the power of Shure's playing to project. Such small details as the "alien" E-natural grace note at the start of the second complete measure were well resolved without sounding muddy.

McGrath had miked Shure relatively closely compared with my 1996 production of Robert Silverman's recording of Liszt's Piano Sonata in b on Sonata: Piano Works by Franz Liszt (CD, Stereophile STPH008-2). Liszt's piano writing for this monumental work asks for dynamic extremes; at times—especially following the prestissimo at the end of the

last movement, where a quadruple-octave chromatic scale crashes down to the final statement of the big theme—Robert hammered the heck out of the Steinway D's lower registers. The RS7's combination of low-frequency clarity and dynamic range again kept the sound of the piano free from mud that would otherwise obscure the harmonic narrative.

#### **Conclusions**

The GamuT RS7 is indeed a superior-sounding, superbly finished loudspeaker capable of offering clean, grainfree, uncolored, full-range sound of wide dynamic range, especially with piano recordings. It also offers exceptional clarity in the lower midrange and bass, where it outperforms Nola's Metro Grand Reference Gold loudspeaker (\$33,000/ pair), which I reviewed in November 2014. But at \$39,900/ pair, the RS7 is priced almost identically to Vivid Audio's Giya G3 (\$39,990/pair), which I reviewed in April 2014, and is not far behind Wilson Audio Specialties' Alexia (\$48,500/ pair), which I reviewed in December 2013. Both of those speakers reach a little higher in ultimate sound quality than does the RS7, I feel. The RS7 is also significantly more expensive than the KEF Blade Two (\$25,000/pair), which I reviewed in June 2015, and the Sony SS-AR1 (\$27,000/pair), which Kal Rubinson reviewed in July 2011-both of which, I feel, come close in overall performance, if not quite achieving the same low-frequency extension.

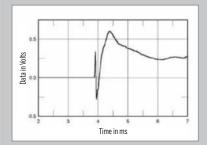
Therefore, whether or not the GamuT RS7 will outperform those other four thoroughbreds in a specific room and system will more than usually depend on the listener's taste in music and sound quality. With that caveat, recommended.

 ${\it 4 See www.stereophile.com/content/recordings-september-1982-two-audio fon-piano-lps.}$ 

#### measurements, continued

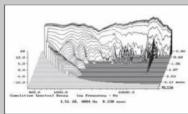
speaker's behavior had it not been for slight lacks of energy in the RS7's two crossover regions. The lack between 1.5 and 3kHz is due to the crossover issue noted earlier; that between 150 and 600Hz is due to boundary interference effects, which are always difficult to minimize with a speaker having widely spaced lower-frequency drivers. (The KEF also had problems in this region, though milder.)

Both the GamuT and the KEF are boosted in the low bass by the lowest-



**Fig.7** GamuT RS7, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).

frequency resonant mode in my room, but with its low port-tuning frequency, the GamuT has more output apparent below 30Hz. Listening to the RS7s while I performed the measurements suggested that the speakers don't handle infrasonic signals gracefully, the low port-tuning frequency meaning that the unloaded woofer cones undergo high excursions below 20Hz. This will not be a problem with digital sources, but it might make the RS7 oversensitive to warp wow signals from poorly optimized LP players. The individual measurements taken to



**Fig.8** GamuT RS7, cumulative spectral-decay plot on tweeter axis at 50" (0.15ms risetime).

generate the red trace in fig.6 revealed that while the two speakers' midrange units were well matched, the left RS7's tweeter was about 1dB higher in output than the right's.

Turning to the time domain, the RS7's step response on the tweeter axis (fig.7) indicates that all four driveunits are connected in positive acoustic polarity. The cumulative spectraldecay plot on the tweeter axis (fig.8) is impressively clean throughout the midrange and treble.

The GamuT RS7's measured behavior is, in general, quite good: a clean waterfall plot, excellent low-frequency extension, well-organized lateral dispersion, and well-balanced in-room behavior. However, I must admit to being perplexed by the fact that the midrange unit doesn't appear to be high-pass filtered to any significant extent, and to being concerned about the less-than-optimal implementation of the upper-frequency crossover.

-John Atkinson



# KALMAN RUBINSON

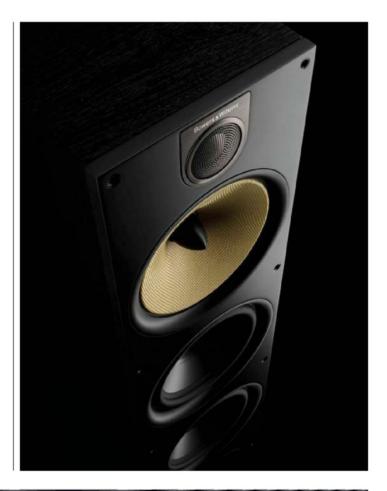
# Bowers & Wilkins 683 S2

# LOUDSPEAKER

or some time now I've wanted to upgrade my weekend system in Connecticut, and have been surveying three-way floorstanding speakers priced below about \$2500/pair. I've focused on the stereo performance of each pair with music because, despite my interest in surround sound, the great majority of recordings are available only in two-channel stereo. Not wanting to look like a Bowers & Wilkins fanboy—my main system has long included their 800-series speakers-I put off auditioning B&W's 683 S2. But my goal was to get the best bang for my buck and with the 683 S2 costing \$1650/pair, it would foolish to be influenced by such extraneous considerations. Besides, the 683 S2's three-way design and physical proportions were precisely what I was looking for.

I was amazed that the 683 S2's specs are so similar to those of B&W's 804 Diamond, which I reviewed in the September 2013 issue.¹ Indeed, as even their weights are almost identical—the 683 S2 weighs 59.8 lbs and the 804 Diamond 59.4 lbs—they seem to most differ in price, with the 804 costing \$7500/pair. Each is a three-way design with dual 6.5" woofers, B&W's proprietary FST Kevlar-cone midrange unit, a 1" dome tweeter, and a front port. The 683 S2's woofers have dual-layer aluminum cones that are loaded by the cabinet's generous proportions and by a Flowport, flared and dimpled to support laminar flow by reducing turbulence. The midrange cone

1 See www.stereophile.com/content/bowers-amp-wilkins-804-diamond-loudspeaker.



# **SPECIFICATIONS**

Description Three-way, vented-box loudspeaker. Drive-units: 1" (25mm) aluminum-dome tweeter, 6" (150mm) woven-Kevlarcone FST midrange, two 6.5" (165mm) aluminum-cone woofers. Crossover frequencies: 400Hz, 4kHz. Frequency response: 52Hz-22kHz, ±3dB on reference axis, -6dB at 30Hz and 50kHz. Dispersion: within

2dB of on-axis response over 60° arc (horizontal) and 10° arc (vertical). Sensitivity: 89dB/2.83V/m. Harmonic distortion (second and third harmonics, 90dB, 1m): <1.0%, 95Hz-22kHz; <0.5%, 120Hz-20kHz. Impedance: 8 ohms nominal, 3 ohms minimum. Recommended amplification: 25-200W into 8 ohms on unclipped program. Maximum recom-

mended cable impedance: 0.1 ohm.

Dimensions 38.4" (985mm) H by 7.4" (190mm) W by 14.2" (364mm) D.

Weight: 59.8 lbs (27.2kg).

Finish Black Ash vinyl.

Serial numbers of units reviewed 1401-0012067, 1406-0013400.

Price \$1650/pair.

Approximate number of dealers: >200.

# Manufacturer

B&W Loudspeakers, Dale Road, Worthing, West Sussex BN11 2BH, England, UK. Tel: (44) (0)800-232-1513. Web: www.bowers-wilkins.co.uk. US: B&W Group North America, 54 Concord Street, North Reading, MA 01864. Tel: (978) 664-2870. Fax: (978) 664-4109. Web: www.bowers-wilkins.com.





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# NEW

GIRO TURNTABLE
FEATURING 9W2 TONEARM



"The design of the AMG 9W2's bearing is no less remarkable than its build quality."

- Art Dudley STEREOPHILE October 2014



is a B&W classic, its Kevlar cone and suspension shared with those in the 800 models. The tweeter's double aluminum dome is decoupled from its mounting by a synthetic gel, and mounted in a tapered tube first seen in B&W's late-1990s Nautilus speakers, which absorbs the tweeter's rear wave, minimizing the wave's effects on the driver's acoustic behavior. Unlike in the 800 series, this tube is *inside* the speaker's cabinet. All of this technology comes at a very attractive price, leading me to suspect that B&W must have been under some pressure to make compromises elsewhere.

But unpacking the 683s revealed a degree of fit'n'finish nearly commensurate with B&W's costlier models. The only finish available in the US is Black Ash, and it's vinyl, not wood. (In the UK, the 683 S2 is also available in White.) Still, the veneer's consistency of quality, especially at the edges and around the back, is impressive. It's complemented by a matte-black grille so fitted to the cabinet that a distinctive groove frames the front, much as a fine pinstripe accents the contours of a car. In addition, B&W supplies an optional base plate, or plinth, that widens the speaker's footprint from 7.5" to 12.6". The supplied rubbery feet or spikes can be used with or without the plinth. I went plinthless, and used the rubbery feet to spare my wood floor. The 683 S2's were quite stable, and eschewing the plinths maintained their crisp, slim profile.

#### Listening

I set up the 683 S2s in the same spots my Paradigm Reference Studio/60 v.3s have occupied for years, first aiming the speakers at the listening position. With a slight decrease in toe-in, the soundstage and center image snapped in



All of this technology comes at a very attractive price. sharply—changes of less than 5° sounded unequivocally less right. Those parameters secured, the other critical parameter to confirm was that the speakers produce satisfactory bass from those positions. For this, I challenged the 683s with a barrage of recordings ranging from the subtle to the formidable.

I began with Christoph Eschenbach and the Philadelphia Orchestra's recording of Saint-Saëns's Symphony 3, with organist Olivier Latry (SACD/CD, Ondine ODE 1094-5), and concentrated on the *Poco adagio* at the end of the first movement and the *Allegro moderato* that begins the second. In both passages, the pipe

## **MEASUREMENTS**

used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the Bowers & Wilkins 683 S2's frequency response in the farfield; and an Earthworks QTC-40, with its small, 1/4"-diameter capsule, for the nearfield responses.

The 683 S2 is specified as having a sensitivity of 89dB/W/m; my estimate of its voltage sensitivity was slightly lower, at 87.7dB(B)/2.83V/m. The impedance, specified as 8 ohms, drops

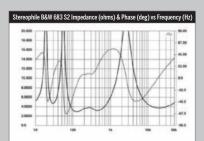


Fig.1 B&W 683 S2, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

below 4 ohms in the lower midrange and in the top audio octave (fig.1), with a minimum magnitude of 2.92 ohms at 124Hz, very close to B&W's specified minimum of 3 ohms.

A small discontinuity in the impedance traces just above 200Hz implies the presence of some kind of cabinet resonance in that region. However, when I investigated the enclosure's vibrational behavior with a plastic-tape accelerometer, the primary resonance mode that I found, on all surfaces other

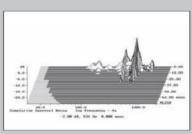


Fig. 2 B&W 683 S2, cumulative spectral-decay plot calculated from output of accelerometer fastened to center of side panel level with midrange unit (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).

than the top, lay at a high 531Hz, with a lower-amplitude mode at 348Hz (fig. 2). These resonances are of fairly high Q and, taking into account their frequencies and amplitudes, unlikely to lead to any reduction in sound quality.

The red trace in fig.3 shows the output of the 683 S2's front-panel port, measured in the nearfield. It peaks between 20 and 40Hz, with the corresponding minimum-motion notch in the woofers' output (green trace) lying

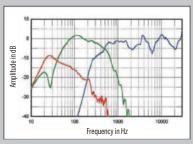


Fig.3 B&W 683 S2, acoustic crossover on tweeter axis at 50", with nearfield responses of midrange unit (blue), woofers (green), and port (red), respectively plotted below 350Hz, 450Hz, and 600Hz.



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organ is less a soloist than an accompanist or member of the ensemble. Through the 683s, every organ note was clean and full, and in proper balance with the strings and woodwinds. The organ's lowest tones, particularly in the *Poco adagio*, weren't as weighty as they would have been with a subwoofer and/or much larger speakers, but the instrument's tonality and character were right, and nary a hint of a resonance stuck out.

I moved on to bass with punch, from a recent recording by Valery Gergiev and the Mariinsky Orchestra of Shostakovich's Symphony 9 (SACD/CD, Mariinsky MAR0524). The timpani had heft and im-

pact, and balanced well with the snare drum and the rest of the orchestra. As expected, this low-frequency incisiveness carried over to the nonclassical repertoire, from double bassist Buster Williams playing a solo version of Rodrigo's Concierto de Aranjuez, on Williams's Griot Libertè (SACD/CD, HighNote HCD7123), to the electrically juiced pulse of Mark Ronson and Bruno Mars in "Uptown Funk," on their Uptown Special (CD, RCA 505310).

Now confident that the 683s were set up for my long-term enjoyment, I sat back and plied them with all the stuff I know. First, their ability to absolutely nail centrally located voices, human or otherwise, was quite striking, and got me jumping up to make sure that, somehow, my disconnected center speaker hadn't gotten magically reconnected. And I kept checking, because the illusion, supported by the physical presence of the silent center speaker and the soundstage specificity

#### measurements, continued

at 27Hz, as expected from the impedance graph. The two woofers behave identically above 50Hz, though with slightly different notch frequencies below 50Hz. Small blips are visible in the woofer and port responses just above 200Hz—the region where, probably and not coincidentally, the glitch in the impedance traces occurred.

Higher in frequency in fig.3, the crossover from the woofers to the mid-

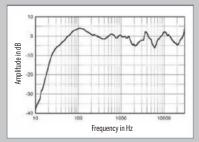


Fig. 4 B&W 683 S2, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with complex sum of nearfield responses plotted below 300Hz

range drive-unit (blue trace), measured in the farfield on the tweeter axis, occurs at 500Hz rather than the specified 400Hz, with steep filter slopes. The 683 S2's higher frequency response on this axis is disturbed by peaks and troughs of approximately equal amplitude—these are also evident in the overall response averaged across a 30° horizontal window centered on the tweeter axis, with the complex sum of nearfield responses plotted below

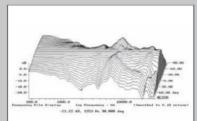


Fig.5 B&W 683 S2, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

300Hz (fig.4). The rise in the B&W's upper-bass response is almost entirely an artifact of the nearfield measurement technique; the speaker is basically tuned to be maximally flat, with a -6dB point at the port tuning frequency of 27Hz.

Fig.5 shows the 683 S2's lateral dispersion, normalized to the tweeter-axis response. This graph shows that the on-axis notch between 1 and 2kHz deepens off axis, which will give the

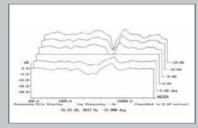


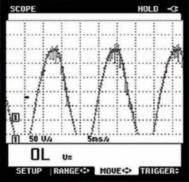
Fig.6 B&W 683 S2, vertical response family at 50", normalized to response on tweeter axis, from back to front: differences in response 15–5° above axis, reference response, differences in response 5–10° below axis.



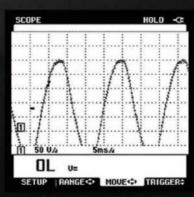
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of the 683 S2s, was unshakable. I think this testifies to the smooth midrange treble balance and the excellent matching of the left and right speakers, despite the fact that their serial numbers reveal that they were far from consecutive in manufacture. The seamless soundstage wasn't much wider than the distance between the speakers, but while it began

#### ASSOCIATED EQUIPMENT

**Digital Sources** Oppo BDP-103 universal Blu-ray player, Mac mini server running Windows 7 via Bootcamp, JRiver Music Center.

Preamplifiers Emotiva XMC-1, Marantz AV8801.

Power Amplifier Bryston 9BSST<sup>2</sup>.

Power Amplifier Bryston 9BSST<sup>2</sup>. Loudspeakers Bowers & Wilkins 804 Diamond, Monitor Audio Silver 8, Paradigm Reference Studio/60 v.3, Sonus Faber Venere 2.5.

Cables HDMI: AudioQuest Vodka. Interconnect: Kubala-Sosna Anticipation (RCA) & Fascination (XLR). Speaker: Kubala-Sosna Anticipation & Fascination. AC: Kubala-Sosna Emotion.

Accessories Brick Wall Series Mode 8R15AUD surge suppressor.—Kalman Rubinson

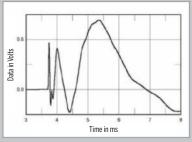
The 683s' ability to absolutely nail centrally located voices, human or otherwise, was quite striking. at the plane of the B&Ws' front baffles, it seemed to widen as it extended more deeply behind that plane. This was distinctly apparent with "Malena," from Será Una Noche's eponymous album (24-bit/96kHz file, M•A Recordings M052A), a

recording notable for its spacious acoustic.

The 683 S2s' tonal balance was generally excellent with the Stuttgart Chamber Orchestra's classic recording of Boccherini's *La Musica Notturna delle Strade di Madrid* on *Die Rohre—The Tube* (SACD, Tacet S 74). Here was all the detail of bow on string—I could almost see the accompanying

#### measurements, continued

speaker a slightly polite balance—as Kal Rubinson noted, the presence of voices was not fleshed out to his complete satisfaction—though the similar notch an octave higher fills in to the speaker's sides, which is why experimenting with toe-in is important. In the vertical plane (fig.6, the traces again normalized to the tweeter-axis response), a sharply defined notch appears at the tweeter/midrange crossover frequency above the tweeter



**Fig.7** B&W 683 S2, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).

axis, while this graph also suggests that the optimal height for a seated listener's ears is actually slightly below the tweeter axis, which is 38" from the floor with the speaker sitting on its plinth.

This is confirmed by the step response on the tweeter axis (fig.7), where the decay of the tweeter's step (the sharp spike at 3.7ms) doesn't blend quite smoothly with the start of the midrange unit's step. This graph also reveals that all four drive-units

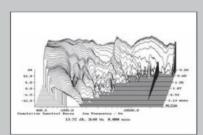


Fig.8 B&W 683 S2, cumulative spectral-decay plot on tweeter axis at 50" (0.15ms risetime).

are connected in positive polarity. The cumulative spectral-decay plot on the tweeter axis (fig.8) shows an impressively clean decay in the tweeter's passband, but some residual energy at 3640Hz, the frequency of the on-axis peak. I note that KR found the 683 S2 to have a smooth balance of midrange and treble, so perhaps this behavior measures worse than it sounds, though it would add to the sense of detail conveyed by the speaker.

Having visited the Bowers & Wilkins Research Center, in Steyning, nestled beneath England's South Downs, and been impressed by the depth of the company's engineering expertise, I am always puzzled by the fact that B&W speakers don't measure as well as they could. But its measurements do reveal that, other than that lack of uppermidrange energy, the sound quality of B&W's 683 S2 has been carefully managed and better than one might expect for just \$1650/pair.—John Atkinson



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cloud of rosin—while warmth of tone from the wood of the instruments filled the recording venue. There was a similar rendering of detail with the brass outbursts in the first movement of the Shostakovich Ninth, mentioned above. These were striking, as intended, but in dynamic and tonal proportion. The 683s did as well with choral music as orchestral, and pop and jazz groups benefited from a lively presentation.

It was only when I began to listen to familiar recordings of solo voices particularly low ones such as Hans Theessink and Leonard Cohen—that I had any hesitation about the 683 S2s. Sure, these singers' characteristic, clearly recognizable depths and familiar upper sibilants were apparent-their vocal ranges were being encompassed. However, they sounded somewhat less full or palpable than they should. It was similar with a wide range of women's voices: their fundamental tones and breath sounds were nicely presented, but their presence not fleshed out to my complete satisfaction. Take "Late Last Night," from Theessink's Call Me (CD, Blue Groove BG-4020), or "Can't Stand the Rain," from Sara K.'s Hell or High Water (SACD/CD, Stockfisch SFR 357.4039.2). Through the 683 S2, there was no doubt of the unique identity and appeal of each singer—the voice was clearly positioned, and in proper relationship to the soundstage and supporting instruments—but the sound was slightly less convincing than I expected. I switched over to B&W's own 804 Diamonds, and, woot!, there they were: the roundness and fullness I'd missed. I'd had the opposite problem with Bryston's Middle T speakers<sup>2</sup> in my Manhattan system: I was troubled

This lowfrequency incisiveness carried over to the nonclassical repertoire.

by a subtle excess in the lower midrange. In both cases, the problem was a subtle one, and given the inevitable variations of room acoustics, recordings, ancillary gear, and taste in sound, may not even exist outside my specific situation.

cone, FST (Fixed Suspension Transducer) midrange unit.

B&W's kevlar-

#### Looking at it from another angle . . .

Compared to all the other speakers I've heard in my Connecticut room and system, the Bowers & Wilkins 683 S2s scored well. The Monitor Audio Silver 8 came closest in performance and price, at only \$2000/pair.3 But while both speakers offer excellent bass quality, the B&W offers more of it. Still, the Silver 8 speaks a little more sweetly to me in my room. Sonus Faber's Venere 2.5 (\$2498/pair)<sup>4</sup> is more comparable with the 683 S2 over most of the audioband, but differs most from the B&W in bass extension and definition, and in having spectacular looks. Certainly compared to my relatively ancient Paradigm Reference Studio/60 v.3s,5 the B&Ws had a much smoother midrange and treble, more stable imaging, and tighter, more resolved bass. In short, no contest. Finally, B&W's 804 Diamond, at \$7500/pair, costs almost five times as much and, judging from both its specs and my listening, scores over the 683 S2 only with some singing voices and in extension/enhancement at the extremes of the audioband.

I'd say that all of that makes B&W's 683 S2 a pretty attractive proposition. ■

- 2 See my review in the February 2015 issue: www. stereophile.com/content/bryston-middle-t-loud-speaker.
- 3 See my review in the January 2015 issue: www. stereophile.com/content/monitor-audio-silver-8-loudspeaker.
- 4 See my review in the November 2013 issue: www.stereophile.com/content/sonus-faber-venere-25-loudspeaker.
- 5 See my review in the December 2004 issue: www. stereophile.com/floorloudspeakers/1204paradigm/index.html.



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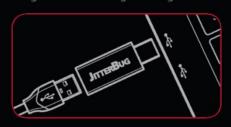
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#### **ART DUDLEY**

## Acoustic Signature Triple X & TA-1000

#### **TURNTABLE & TONEARM**

n a bizarre but happy turn of events, recent consumer trends have given even the most socially awkward audiophile something to talk about at cocktail parties and family gatherings at which normal people predominate: the PonoPlayer and vinyl. These are hot topics; each is among the best-sounding music sources available, and both offer hope for our hobby, if not for music lovers in general. But vinyl has the advantage of appealing to a much wider range of budgets. LPs can be had from anywhere to "We'll pay you to haul these away" to "Your loan officer is on line one." Likewise, vinyl playback hardware is available in virtually every price range, from a secondhand Dual 1229 (\$50 and up) to the highly praised Continuum Audio Labs Caliburn (\$200,000 and down).

The Dual is surely priced too low for most hobbyists to consider, the Continuum too high for all but a few hobbyists to afford. Between them—and far closer to the Dual in price—is the most recent recordplaying combination to cross my threshold: the Triple X turntable (\$5995) and TA-1000 12" tonearm



(\$1995), from German manufacturer Acoustic Signature, a brand that is new to me despite having existed since 1996. Judging from their website, and from my brief exposure to their Storm turntable at this year's Salon Son et Image, in Montreal, the distinguishing traits of Acoustic SigThe Acoustic Signature
Triple X is among the
growing number of record
players that require little
in the way of assembly.

#### SPECIFICATIONS

Description Two-speed, belt-driven turntable with pivoting tonearm. Motor: AC synchronous. Speeds: 33½, 45rpm. Tonearm spindle-to-pivot distance: 295.6mm.

Dimensions 20.6" (528mm) W by 7" (180mm) H by 16.3" (418mm) D . Weight: 101.2-121 lbs (46-55kg)

depending on extras.

Finishes Black, White, Black & White, Makassar & White, Makassar & White, Makassar & Black

Serial number of unit
reviewed A14-11-031.

Prices Triple X turntable,
\$5995; TA-1000 12" tonearm, \$1995. AC-1 power-supply upgrade costs \$250 when

purchased with the Triple X, \$350 when purchased separately. Approximate number of dealers: 12.

#### Manufacturer

AS-Distribution GmbH, Ulmer Strasse 123, D-73037 Göppingen, Germany. Tel: (49) (0)7161-3898135. Fax: (49) (0)7161-3898137. Web: www.acoustic-signature.com.

#### **US distributor:**

Fidelis AV, 460 Amherst Street (Route 101A), Nashua, NH 03063. Tel: (603) 880-4434. Fax: (603) 880-4433. Web: www.fidelisav.com. nature's turntable line are massive aluminum platters and, in most cases, similarly massive plinths; AS's tonearm line, established only last year, is decidedly less varied, comprising a single pivoting arm available in three different lengths: 9", 10", and 12".

#### **Description**

Distinct from Acoustic Signature's priciest models, whose supporting structures are all of decidedly nontraditional shapes, the Triple X—the middle model in AS's turntable line—is built into a rectangular plinth 20.6" wide by 16.3" deep. On my review sample, the top of that plinth was clad in a striking veneer of Makassar wood,

sprayed and buffed to a very high gloss, while the sides were painted in a similarly lustrous shade of black. (The Triple X is also available in a similar two-tone style of Makassar and white, as well as in all black, all white, and black and white.) An oblong armboard with rounded ends, machined from aluminum, rises 0.75" above the top surface. That structure is bolted, from underneath the multilayer plinth, to an upper level of what appears to be MDF; additional layers of MDF are included in that 3"-thick sandwich, along with layers of aluminum and steel, all of which contribute to the plinth's weight of 76 lbs without platter. At first glance, the plinth appears to be supported by three large, block-like, aluminum feet; as it turns out, the actual supporting is done by dimesized metal inserts threaded into those blocks, and adjustable from underneath.

In common with other well-known turntables—not to mention various early mastering lathes—the Triple X's drive motor occupies a separate structure unconnected to the rest of the turntable; whether for functional or cosmetic reasons, the diameter of the cylindrical aluminum motor housing is scarcely 0.1" smaller than that of the circular opening made for it in the plinth. The motor is topped with a 1.5"-diameter pulley of black plastic, drilled through with a pattern of 16 small holes. The pulley isn't stepped—speed selection for the Triple X is done with onboard electronics—and it drives the platter by means of a thin rubber belt.

Said platter, which adds another 24 lbs to the Triple X's weight, is machined from aluminum to a thickness of 1.95". An 11"-diameter area of its underside is recessed and filled with a lead-like sheet, presumably for damping. The buyer can select from one of four extra-cost platter options, all involving the use of the company's brass Silencers: precisely machined, flat-topped, cylindrical damping slugs that are press-fit into holes made for them in the platter, to absorb and dissipate the excess energy that accumulates and otherwise lingers during record play. Platters can be had with 8 or 24 Silencers, which can be gold-plated or not—the plating is said to confer a sonic benefit. Prices start at \$1250 for a platter fitted with eight non–gold-plated Silencers; my review sample came with the standard, unSilencered platter.

Judging by appearances, the Triple X's platter bearing seems fairly conservative: a 0.475"-diameter axle with a captured thrust ball as its contact point, allied with an aluminum brass bearing well with a pair of bronze sleeves



In common with other well-known turntables, the Triple X's drive motor occupies a separate structure unconnected to the rest of the turntable.

and charged with a small amount of medium-light-viscosity oil. That said, AS claims for their bearing a technological distinction: a thrust pad made of Tidorfolon, an alloy for which the company claims sufficient durability to offer a 10-year warranty against bearing

Supplied to me in its 12" version, Acoustic Signature's new TA-1000 is a pivoting tonearm with gimbaled bearings and an armwand comprising separate inner and outer tubes of carbon fiber, for self-damping without undue storage of energy. Antiskating bias is provided by a thread and falling weight of unique design: The thread's anchor point can be adjusted in the usual manner, and the weight's movement is restricted to an upright tube, the position of which can also be adjusted relative to that of the arm's pivot point—thus providing a range of effectiveness considerably wider than average. Downforce is static, adjusted by moving a brass counterweight fore or aft along a finely threaded axle. Arm height is fully adjustable, though not on the fly, and azimuth can be adjusted after loosening the three screws that hold the arm itself to the bearing assembly: a tricky-seeming procedure that I did not attempt to undertake.

#### **Installation and setup**

When you get right down to it, most of the perfectionist-quality turntables I've owned or singled out for praise—the Linn LP12, the Roksan Xerxes, the Pink Triangle Anniversary, the Voyd, the Well Tempered Record Player, the Ayre Acoustics/DPS, even the Garrard 301 and Thorens TD 124—are actually *kits*. Some are packaged with the special tools and jigs required for putting them together, while entire companies have been built around the setting-up of others. What a great time to be alive.

By contrast, the Acoustic Signature Triple X, the packaging for which is one of the sturdiest and most professional I've encountered, is among the growing number of record players that require little in the way of assembly: By far the greatest challenge in installing the Triple X was heaving its 105-lb bulk out of said carton and onto my Box Furniture rack.

That chore was all the more challenging because the plinth had to be lowered straight down onto the motor pod—with precious little room for error, as noted above. (The generally good owner's manual recommends: "Maybe ask a friend for help.") Acoustic Signature suggests that, once in position, the plinth can be leveled by means of the threaded adjustment inserts within its three blocky metal feet, but that, too, would seem to require an assistant—or at least a turntable stand on which the plinth can be rotated this way and that for temporary access to the bottom of each



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While fidelity is always paramount, Rotel engineers understood that certain features were required to accommodate the needs of contemporary music listeners. For example, the RC-1590 stereo preamplifier is replete with all of the inputs, outputs, and control functions required for enjoying all of today's digital and analog source sources, including 24/192 PC-USB, iOS USB, AptX Bluetooth, balanced analog input/output and even a superb MM phono stage.

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foot, one at a time. My own strategy was to begin by making my equipment rack level, and then, before lowering the plinth into place, to ensure that the adjustment inserts on the bottoms of all three feet were turned fully clockwise. The result was a turntable that was nearly perfectly level.

Installing the Triple X's 24-lb platter also required more in the way of brawn than brains. Following the instructions, I slowly lowered the platter and

spindle into place—making sure to avoid having my fingers mashed or worse in the tiny gap between platter and plinth. The bearing seemed to be free of friction, and the platter turned with no observable wobble or runout error. The only turntable chores remaining were to: install the drive belt; plug the motor's short, slender umbilical into one of two sockets on the back of the plinth; and plug the outboard wall-wart power supply into the other. Those connectors are, respectively, an RJ-45 CAT-5 plug and RS-232 plugs: odd choices, but ones that work well enough.

The TA-1000 12" tonearm was similarly easy to set up, although I should note that my review sample of the Triple X arrived with the TA-1000's arm-mount collet already in place. (*That* said, given the very sensible design of the turntable's radially aligned tonearm board, I think that phase of the TA-1000's installation should be simple enough for anyone with an accurate ruler and access to a good drill press.) The split-ring collet, which acts as a clamp for the tonearm pillar, was easy to adjust for height, and appeared to offer good rigidity without deformation, marking, or departures from perfect perpendicularity. Less precise was the height adjustment for the cueing mechanism, which was never plumb after tightening—and so the height of the raised arm varied from the outside of the record to the inside.

In common with other contemporary tonearms, the TA-1000's cartridge-mounting platform is a simple, small block of aluminum in which two (unthreaded) mounting-bolt holes straddle a central bolt by which the block is fastened to a lengthwise slot at the end of the tonearm proper. Overhang and offset angle were thus easily adjusted—my view of the cantilever and cartridge body were as unobstructed as could be—and both adjustments could be locked in place with a single bolt. Making this process even easier was one of the finest brand-specific alignment gauges ever supplied with a tonearm. Looking somewhat like the black plastic pickguard of an outsize electric guitar, this two-part device snapped into place between the record spindle and the top of the TA-1000's bearing gimbal, displaying with rare clarity two Baerwald-compliant etched grids. Nice.

Although the threaded counterweight was uncalibrated, the obviously high quality of its machining made it easy to adjust downforce in small, precise increments; said changes could then be locked in place by means of one or more of the counterweight's three locking screws. My only complaint: Residual friction in the vertical bearings of my TA-1000 sample was noticeably high—too high to coax



Acoustic Signature's optional power supply, the AC-1.

I believe Acoustic Signature's AC-1 was responsible for the greatest improvement I've ever heard a power supply wring from a turntable.

the arm into a reliably horizontal "floating" position under (presumed) zero downforce. Being of the opinion that excessive vertical friction is probably less critical with the low-compliance cartridges I used—the DL-103 and the Miyajima Premium BE Mono II—than with very high-compliance cartridges, I was mildly peeved but did not lose sleep. I failed to get the measure of the TA-1000's lateral-bearing friction, which I usually do by alternately raising, by small degrees, the left and right ends of a turntable plinth and observing the behavior of an untethered arm set for zero downforce: The Triple X's enormous weight confounded my efforts.

In use, the Triple X was straightforward. Near the rightfront corner of the top of the plinth, separate LEDs for  $33\frac{1}{3}$  and 45rpm indicate platter rotation, flashing to indicate incorrect or unstable speed but otherwise glowing steadily. They are straddled by a pair of pushbutton switches: one to turn the motor on and off, the other to toggle between the two speeds. Both switches are soft-touch buttons of similar appearance to the ones used in the classic Philips GA-212 turntable of the 1970s; also like the GA-212's switches, the ones on the Triple X didn't always work on the first try: Both would often respond to even a vigorous push with the electronic equivalent of a blank stare.

Perhaps owing to its apparently large size, I labored under the assumption that the motor supplied with the Triple X was a high-torque model; as it turns out, the opposite is true. I found it easy to stop the spinning motor pulley with only a light touch, and the spinning platter could itself be stalled by applying to its rim only a gentle force. The platter requires nearly half a minute—26.95 seconds—to go from 0 to 33½, pm. Another 14 seconds are required to go from there to 45rpm—yet, interestingly, a full 17 seconds are needed to slow back down to 33½, indicating that the massive platter's moment of inertia plays a more significant role than the motor in maintaining correct speed. (It also appears that the speed of the platter's rotation is measured at the motor.)

I measured the Triple X's speed accuracy using Dr. Feickert Analogue's 7" test record and ProgTec's PlatterSpeed software for the Apple iPhone. Set to 33½rpm, the platter's actual speed ranged from 33.39 to 33.50rpm. Wow, in accordance with DIN IEC 386, was ±0.13% using the 2-Sigma method. As for the tonearm's behavior, when equipped

<sup>1</sup> Lest you suspect I overstate the case: Just now, on May 21, 2015, I attempted to turn off the Triple X by pressing, firmly and unambiguously, its on/off switch. It took five tries.



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with my Denon 103 cartridge, the TA-1000 exhibited resonant frequencies of 11–13Hz in the lateral plane and 14Hz in the vertical, observed with the aid of the *Test Record* (LP, Hi-Fi News HFN001) created and sold by the British magazine *Hi-Fi News*. Both modes were quite pronounced, with effects both audible and visible.

#### **Listening, Round 1**

The first record I tried on the Triple X was Jacqueline Du Pré's recording, with organist Roy Jesson, of the *Adagio* from J.S. Bach's Toccata, Adagio, and Fugue in C, BWV 564 (LP, EMI HQS 1437). I was somewhat underwhelmed: The music was pallid—the solo cello exhibited none of the timbral opening-up or *bloom* I hear with my combination of Garrard 301 turntable and EMT 997 tonearm—not to mention dynamically unstirring and notably lacking in force. On the other hand, the moment the stylus of my Denon DL 103 touched the record's surface, I was aware that the Acoustic Signature was the source of notably less low-frequency bearing noise than is my bazillion-year-old Garrard.

The next few records suggested that freedom from rumble was not the German player's only strength. Among

those selections was a drop-dead-gorgeous reissue of the famous recording of Mahler's Symphony 9 by John Barbirolli and the Berlin Philharmonic (LP, EMI/Electric Recording Company ASD 596 and 597), in which I heard a strong sense of center fill—the Acoustic Signature combo exceeded

my reference in that regard, though not in overall scale and solidity—and suggestions of decent touch on drumbeats, plucked strings, and the like. Colors, especially of the larger brass and woodwind instruments, were satisfying, though still less vivid than I like. Bass tones were solid, tight, and well fleshed out, though not terribly forceful; at the other end of the audioband, however, I heard some congestion in the higher-pitched notes from the strings, especially in louder passages. The bag was still mixed.

Up to this point, I had felt that the Acoustic Signature combination was holding back the music. Certain elements of the sound were praiseworthy, but recorded performances weren't as stirring as I'd hoped. Even "Alex Chilton," from the Replacements' *Pleased to Meet Me* (LP, Sire 25557-1)—a song that seldom fails to inspire, regardless of playback gear -seemed lackluster. It was then that I decided not to wait until the end of my time with the Triple X before replacing its stock wall wart with the AC-1 power-supply upgrade (\$250 when purchased with the Triple X, \$350 when purchased separately), which distributor Fidelis AV had also supplied. The AC-1 also connects to the turntable by means of a CAT-5 connector, so it was easy to switch back and forth and compare the effects of the two. The distinction was surprisingly unsubtle-and that, as Robert Frost would surely say, has made all the difference.

#### **Listening, Round 2**

With the possible exception of the refinement conferred on my Linn LP12 by Naim Audio's Armageddon isolation transformer, I believe Acoustic Signature's AC-1 was responsible for the greatest improvement I've ever heard a power supply wring from a turntable.<sup>2</sup> In the Replacements' "Alex Chilton," Tommy Stinson's electric bass suddenly jumped from the mix, sounding tight, forceful, and altogether louder than it had before I ditched the wall wart for the AC-1. That

#### ASSOCIATED EQUIPMENT

Analog Sources Garrard 301 turntable; EMT 997 tonearm; EMT OFD 15 & TSD 15 pickup heads; Denon DL-103, Miyajima Premium BE Mono II cartridges.

Digital Sources Halide Designs DAC HD USB D/A converter; Apple iMac G5 computer running Audirvana Plus 1.5.12 playback software; Sony SCD-777 SACD/CD player. Preamplification Hommage T2 step-up transformer, Shindo Masseto preamplifier.

Power Amplifiers Shindo Corton-Charlemagne monoblocks, Shindo Haut-Brion.

**Loudspeakers** Altec Valencia, DeVore Fidelity Orangutan O/96.

Cables USB: Wireworld Revelation 2.0. Interconnect: Audio Note AN-Vx, Nordost Blue Heaven, Shindo Silver. Speaker: Auditorium 23, Nordost Blue Heaven.

Accessories Box Furniture Company D3S rack (source & amplification components), Audiodesksysteme Gläss Vinyl Cleaner.—Art Dudley

With its excellent speed stability and temporal performance, notable clarity, and superb reproduction of space, the Acoustic Signature combination deserves consideration.

song sounded so much better, and gained so much drive, that I had no choice but to leave the needle in the groove for the rest of the side. I'm glad I did. Otherwise, I would have missed the similar increase in propulsiveness and sheer fun the upgrade added to the hilariously jaded "I Don't Know." After that, I wasted no time in listening again to the records with which I began my review—and there was the bloom in Du Pré's cello, there were the clean, clear trebles and at least some of the bass force I've come to expect from the Barbirolli Mahler.

From that point forward, the Acoustic Signature combination distinguished itself with excellent clarity and poise, very good temporal performance, and acceptably good touch, impact, and color, all presented with a good if not great sense of scale but better-than-average spatial qualities, the latter especially in terms of its excellent center-fill solidity and stage depth. Surprisingly for a high-mass turntable, the Triple X did not provide the last word in bass extension and power, and was handily beaten in that regard by my Garrard 301, which also had an even better sense of drive.

The Acoustic Signature combination succeeded at portraying the complex temporal interaction between, and occasional clashes of, Pierre Michelot's bass and Kenny Clarke's drums in the first of several takes of "Nuit sur les Champs-Élysées," from Miles Davis's soundtrack to Louis Malle's 1958 film *Ascenseur pour l'Échafaud* (LP, Fontana/Speakers Corner 0660213). I was also impressed with the good performance on this track in terms of spatial perspectives, Davis's trumpet being front and center and pleasantly substantial, the other instruments seemingly arranged in a

2 Although the turntable's measured performance changed with the addition of the AC-1, it's difficult to draw from the new numbers any useful conclusions. With the AC-1 supplying the juice, the Triple X's platter speed ranged from 33.46 to 33.60rpm. Wow, measured with DIN IEC 386, was ±0.19 using the 2-Sigma method—actually a bit worse, and now slightly on the high side of acceptable—and ±0.16 with dynamic weighting. Go figure.

# Ayre?... Really?





# Yes, Really!

But the Codex is so small it could sit on my desktop... Yep, and it is a DAC + headphone amp + preamp, perfect for a desktop or small system.

I bet it uses op-amps though... Nope, It's a fully discrete design. And staying true to the music, it doesn't use any feedback either.

Then it must use a switching power supply... The Codex uses a pure analog, linear supply, with ultraquiet, high-speed discrete regulators so the music jumps to life.

Yeah, but it's only USB, right? Actually it has optical and USB inputs, allowing you to connect both your computer and another A/V source.

It's so inexpensive, they must be making it over...

Nope, still built from start to finish by hand in Boulder,
Colorado. With U.S. made parts for a lifetime of enjoyment.

Sounds like I should take a listen... Cool, let's go!

www.ayre.com/dealers.htm

small, tight circle behind him. Davis's tone was exquisite throughout, and the Triple X also gave a beautiful account of the sound of Barney Wilen's tenor sax in his abortive solo at the end of the first take, although my reference player allowed the bass a much bigger, fuller sound, and gave more snap and touch to the distant drums.

Piano music was mostly well served by the Triple X and T-1000. Throughout Lenny Tristano's idiosyncratic *The New Tristano* (LP, Atlantic 1357), lines

# The next few records suggested that freedom from rumble was not the German player's only strength.

of notes had good momentum and "pull," and the densest passages were presented clearly and explicitly. Tristano's piano sound was slightly lacking in texture but had believably good tone and freedom from an overly mechanical or glassy sound, as was also true of the piano in Clifford Curzon's recording of Liszt's Sonata in B Minor (LP, Decca/Speakers Corner SXL 6076). And despite their bandwidth-limited and often grossly colored sound, even the crazy old piano recordings I so often enjoy, including a slightly oversanitized transcription of Alfred Cortot's performance of the Liszt from 1933 (LP, EMI Electrola C 047-01 504), sounded convincingly, serenely musical via the Acoustic Signature combo.

Pressed to name a recording that showed the Acoustic Signatures at their best, I'd point to two. First was Ella Fitzgerald's lovely performance of "But Not for Me," from Ella Fitzgerald Sings the Gershwin Songbook (LP, Verve MGVS-7000). Fitzgerald's voice was tonally and spatially convincing—again, that image was locked solidly in placeand the orchestra occupied a stage of generous scale, if not quite as large as I prefer. Strings were sweet, the celesta chimed prettily and colorfully and with realistic decay, and the double bass had enough touch to keep the piece moving forward. My second choice would be the AS's way with pianist Wilhelm Kempff's later Bach recordings, especially his Prelude and Fugue No.10 in e, BWV 855 (LP, Deutsche Grammophon 2531 299). The AS combo was clean without sterility and supremely

musical, with excellent momentum and flow, and there were no distortions of pitch to detract from Kempff's singular gravitas. The playback was further enhanced by the AS combo's slightly more recessed spatial perspective compared to that of my reference, which is almost too up front and intense to do this record justice. Again, only a slight lack of texture in the piano's lowest strings held back the sound.

#### **Conclusions**

Our favorite neighbors came over on Memorial Day for a cookout, and the wife brought along her parents, in town for a visit. The older couple, both in their 70s, couldn't help seeing the many LPs stored throughout the house, and noted with enthusiasm their awareness of vinyl's recent ascendance. "I hear that CDs are pretty much dead," said the missus. "Deader than Julius Caesar's dog," said I. Then my wife made margaritas.

This is, in other words, a good time to be in the turntable business—and if I hadn't already taken the vows of the Holy Order of the Reviewer, even I might be tempted to give it a spin. Were I to do so, I'm not sure I'd make anything as expensive as the Triple X-but, at the same time, one should note that this model, like its Acoustic Signature stablemates, costs less than the high-tech/high-mass turntables from other firms. The TA-1000, too, is a value standout in an era when so many new high-end tonearms strain against and occasionally herniate the five-figure barrier, apparently without blushing. Good value notwithstanding, I must note that I preferred the previously reviewed (July 2015) Pear Audio Kid Howard turntable and Cornet 2 tonearm (\$4995 when purchased together), for their bigger, more textured sound, and-remarkably!-the turntable's quicker startup times. But both players had me wishing for a good old-fashioned toggle-type power switch.

Nevertheless, with its excellent speed stability and temporal performance, notable clarity, and superb reproduction of space, the Acoustic Signature combination of Triple X turntable and TA-1000 tonearm deserves consideration; in particular, anyone considering buying a more expensive high-mass turntable owes it to himself/herself to audition the Acoustic Signature Triple X before spending money on something else.



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#### **HERB REICHERT**

### Vinnie Rossi LIO

#### MODULAR INTEGRATED AMPLIFIER



y girlfriend, "bb," a 6'-tall Aries artist, always says, "Math, science, religion, and even history, are all simply stories we tell ourselves about our experiences with a phenomenon we call

My father, Herb Senior—the Deacon—always said, "The fundamental nature of the universe is vibratory—everything we experience is just waves!" He explained that waves—possessing power, amplitude, and frequency—are the basic building blocks of our reality. The universe actually "works" and is "comprehensible" because these waves are not random, but organized into exponential intervals called octaves. Our job, he told me, was to recognize and study this mathematical (and mystical) *nature* in action.

It's a shame that bb and the Deacon never met.

Meanwhile, I, your humble fabulist, have always claimed that when you listen to an amplifier drive a loudspeaker, the "sound character" of what you hear is determined directly

by the strength, reserve, and basic *electrical* nature of that amplifier's power supply. Imagine an audio-frequency signal (a wave) impressed on an amplifier-plus-loudspeaker load and simultaneously modulating a standing pool of stored energy. Imagine that this stored energy is the medium (like water) in which the wave operates. Then, perhaps, you can see how the quantity, quality, and especially the "elasticity" of this stored energy determine how an amplifier sounds when reproducing recorded music.

#### **Ultra DC**

Vinnie Rossi, of Red Wine Audio, a manufacturer of audio electronics, has turned understandings similar to the above into an exciting new power-supply technology used in his LIO modular amplifier. Instead of a conventional mainstransformer-rectifier-capacitor-regulator supply, Rossi's new design uses isolated rows of series-wired, high-capacitance, low-ESR ultracapacitors to store and release energy.

#### SPECIFICATIONS

Description Modular integrated amplifier with remote control and optional individual modules for phono inputs, line inputs, digital inputs, volume control (switched resistor or autoformer), tubed line stage, headphone amplifier, and power amplifier. Inputs: 3 phono (MM, MC1, MC2, all RCA); 3 line (RCA); 3 digital (optical, BNC, USB). Outputs: headphone, balanced (XLR) or single-ended (½ TRS); fixed RCA, variable RCA (2),

rhodium-plated speaker terminals (L&R). Tube complement (Tubestage): two E88CC dual triodes. Power output: 25Wpc into 8 ohms (14dbW), 45Wpc into 4 ohms (13.5dBW), 65Wpc into 2 ohms (12.1dBW).Headphone output: adjustable gain, 1W into 32 ohms, dedicated low impedance (1 ohm).

Dimensions 17.5" (445mm) W by 4" (102mm) H by 12" (305mm) D. Weight: variable, depending on modules chosen.

Price as tested: \$7855

with Phonostage, Remote

Cartridge Loading module, Line input stage, Digital input stage, Tubestage, Resistor Volume Control, Headphone amplifier, and MOSFET amplifier; \$8160 with Autoformer Volume Control replacing the RVC and Tubestage. Module prices: Analog Input module, \$295; RVC, \$395; Remote Cartridge Loading module, \$495; Headphone Amplifier, \$695; Tubestage, \$795; MC/MM Phono Stage, Digital input, and MOSFET power amplifier, \$895 each, Autoformer Volume Control, \$1495. Approximate number of dealers: Sold direct, also sold by Fidelis Home Audio. Warranty: 10 years, parts & labor.

Manufacturer Vinnie Rossi, 800 Main Street, Suite 125, Holden, MA 01520. Tel: (774) 234-0800. Web: www.vinnierossi.com.





Rossi calls his new power-delivery strategy PURE DC-4-EVR. The availability of ultracapacitors so shifted his paradigm that, in contrast to his Red Wine Audio products, which run on battery power, the products sold under his own name are based on Pure DC-4-Evr. According to Rossi,

"This patent-pending Pure DC-4-Evr technology employs banks of high-tech ultracapacitors in place of conventional AC power or batteries. The ESR of the caps is approximately 0.002 ohm, so they can supply hundreds of amps instantaneously. You can arc-weld with them. They can also be charged extremely quickly. And yes, these are ultracaps of 350F (350 farads, or 350,000,000 $\mu\text{F}$ ) each. Multiplied by nine but run in series for each of the LIO's (two separate) capacitor banks, the total capacitance divides by the number of caps used to net 33.89F per 24V bank. But yes, there are 6300F at 2.7V of total charge under the hood if they all were connected in parallel."

While one bank of ultracaps is delivering pure DC to the LIO's audio circuits, the other bank is charging. The LIO's audio circuitry is never connected to the charging capacitor bank, and is therefore always 100% isolated from the AC mains and its sometimes devilish discontents. Meanwhile, all the control circuitry is powered directly and exclusively from



The LIO's two banks of ultracaps are positioned behind the front panel.

the 24V charger—which also feeds a dedicated 5V regulator for all logic circuits in all of the modules (see later). Rossi says, "LIO owners do not need expensive power filters, power cords, or condition-

ers to achieve ultimate quiet and musical resolution."

#### The LIO

Walter Swanbon, of Fidelis Home Audio, in Nashua, New Hampshire, calls the Vinnie Rossi LIO the "Swiss Army knife of audio amplification." I agree.

The base LIO costs \$2495 and, by itself, can't play music.

#### **MEASUREMENTS**

measured the Vinnie Rossi LIO using my Audio Precision SYS2722 system (see www. ap.com, and the January 2008 "As We See It" at www.stereophile. com/content/measurements-mapsprecision). With its modular topology, offering optional phono and digitalinput stages, the choice between a switched-resistor volume control and an autotransformer volume control, an optional tubed line stage, a headphone amplifier, and a MOSFET power amplifier, the LIO is actually eight products in one and presents a complex target for measurements. I tested most of the configurations fully, with spot checks elsewhere.

To minimize strain on the amplifier's output stage, I measured the performance of the phono and D/A modules at the fixed-level outputs with the power-amplifier outputs disabled. The moving-magnet input offered a gain of 34.9dB, the two moving-coil inputs (with their input impedance set to 2000 ohms) a gain of 57.75dB, both lower than the respective specified gains of 40 and 60dB. Both MM and MC inputs preserved absolute polarity.

The MM input impedance was close to the specified 47k ohms at low and

middle frequencies, though it dropped to 38k ohms at the top of the audioband. The review sample was fitted with the remotely adjustable input impedance for the MC inputs, which can be adjusted from a maximum value of 2k ohms to 26 ohms. I spot-checked the input impedance at 20Hz, 1kHz, and 20kHz with the impedance set to 99 ohms, 499 ohms, and 2k ohms. However, I got anomalous measurements. Regardless of the setting, the input impedance at 20kHz measured close to 60 ohms; at 20Hz, it was between 200 and 260 ohms. While the MC input impedance did increase

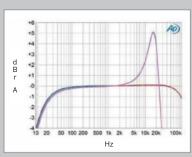
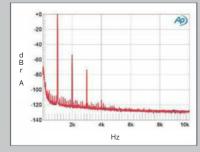
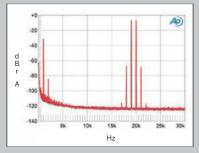


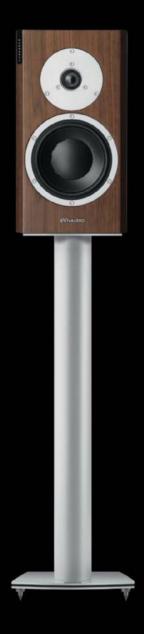
Fig.1 Vinnie Rossi LIO, Phonostage, response with RIAA correction: MM input (left channel blue, right red), MC input (left cyan, right magenta) (1dB/vertical div.).



**Fig.2** Vinnie Rossi LIO, Phonostage (MM), spectrum of 1kHz sinewave, DC-10kHz, at 5mV input into 100k ohms (linear frequency scale).



**Fig.3** Vinnie Rossi LIO, Phonostage (MM), HF intermodulation spectrum, DC-30kHz, 19+20kHz at 50mV input peak into 100k ohms (linear frequency scale).



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It's simply a moderately heavy aluminum case with DuPont Corian front and side panels, a plug-in output module, a Pure-DC-4Evr ultracap power supply, and an all-metal remote control of black and chrome that is, by far, the most luxurious I've used.

To make this box operational, you must add modules. The LIO's base price as a remote-control line preamplifier, fitted with Input Select, Resistor Volume Control (RVC), Line output module and Tubestage is \$3980 (price as of the time of writing), but it can be ordered with the LIO System Expansion Modules of the buyer's choice. The RVC module costs \$395; the Headphone Amplifier module costs \$695; the Tubestage, which uses the very "rolling-able" E88CC/6922 tubes, costs \$795; the MC/MM Phono Stage, Digital Input, and MOSFET power amplifier modules each cost \$895, the Phono Stage with remote loading control costs \$1390; and the Autoformer Volume Control, which replaces both the RVC and the Tubestage, costs \$1495. The MOSFET Amplifier module runs in class-A/B and offers maximum powers of 25Wpc into 8 ohms, 45Wpc into 4 ohms, or 65Wpc into 2 ohms.

In any configuration, the LIO is, to my eyes, the most attractive, well-crafted integrated amp I've seen. Vinnie Rossi's signature logo (with capacitor symbol) is a bit flashy but elegantly drawn. The well-proportioned case (available in black, silver, or combinations thereof) has the stylish feel of high fashion in Milano. I love the way the engraved aluminum top panel slides back to reveal an intriguing inner



landscape of sturdy PC boards encompassing an entire redblue-and-green garden of Performance Modules.

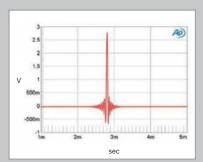
#### In the beginning

I first recognized the specialness of Vinnie Rossi's new LIO integrated amplifier while setting up a turntable for *CNET* and *Stereophile* writer Steve Guttenberg. As I worked, we listened to Technics SB-C700 loudspeakers (review in progress) driven by the glorious Pass Labs XA100.5 monoblocks (\$16,500/pair). I kept looking up from the 'table and saying, "Steve, is it just me? Or is this, like, one of the best hi-fi

#### measurements, continued

or decrease with the setting at 1kHz, I measured 817 ohms at a nominal 2k ohms, 543 ohms at a nominal 499 ohms, and 307 ohms at a nominal 99 ohms. The phono stage's output impedance was 1300 ohms at 20Hz, and around 42 ohms in the midrange and above.

The MM input featured superbly accurate RIAA de-emphasis, with excellent matching between channels, a wide ultrasonic response, and a gentle low-frequency rolloff of -1dB at 25Hz (fig.1, blue and red traces). However, the MC inputs had a 5dB peak at 18kHz, with a sharp rolloff above that frequency (fig.1, cyan, magenta). Chan-



**Fig.4** Vinnie Rossi LIO, digital input, Filter 1, impulse response at 44.1kHz (4ms time window).

nel separation was excellent, at >85dB over most of the audioband, and the phono inputs were very quiet, offering signal/noise ratios of around 63dB for both MM and MC stages, measured with those inputs shorted to ground and the measurement bandwidth restricted to the audioband.

Overload margins at low and middle frequencies were good for both MM and MC inputs, at 19dB (MM) and 17dB (MC), but the high-frequency overload margin was only okay for the MM input (10dB), and poor for the MC input (just 1.5dB). Distortion was a little higher than normal, though predominantly the subjectively innocuous second

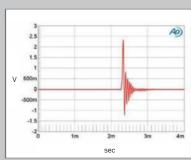


Fig.5 Vinnie Rossi LIO, digital input, Filter 2, impulse response at 44.1kHz (4ms time window).

harmonic (fig.2). But even at the equivalent MM level of 1kHz at 5mV, high-frequency intermodulation was poor, with the difference component at 1kHz resulting from an equal mix of 19 and 20kHz tones lying at just -33dB (2.2%, fig.3).

Turning to the digital input module, I tested the USB input using my Mac-Book Pro running on battery power. Apple's USB Prober utility identified the module as "XMOS USB 2.0 Audio Out" and confirmed that it operated in the optimal isochronous asynchronous mode. The TosLink input accepted 24-

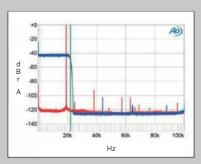


Fig. 6 Vinnie Rossi LIO, digital input, Filter 1, wideband spectrum of white noise at -4dBFS (left channel blue, right cyan) and 19.1kHz tone at OdBFS (left red, right magenta), with data sampled at 44.1kHz (20dB/vertical div.).

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systems I've ever heard?" He didn't answer. I whined louder: "Steeeve! Is this the best hi-fi ever or what?" Still no answer. As I fiddled with the antiskate, Vinnie Rossi and Alexis, his partner in life and business, arrived.

Finally, I got the turntable together, and Rossi and Steve got the LIO hooked up to the Technics speakers. I can't remember the song, but it made me freeze in my tracks. What the ...? No way is this possible. All I can say is, when you replace amps like the Pass XA100.5s with any moderately priced integrated, you're supposed to feel grave disappointment. That afternoon, I felt shock and wonder. Right out of the box, the Vinnie Rossi LIO played music that flowed smoothly and silkily—and was noticeably more quiet and grainless than the venerable Passes.

#### The Slagleformer

That day at Guttenberg's studio, I was surprised to discover that Rossi is good buddies with an old friend of mine, master transformer builder and world-class audio polymath Dave Slagle, of Intact Audio. Rossi is also friendly with one of Dave's design collaborators, a very smart man named John Chapman, of Bent Audio. Rossi explained:

"I have been working with John Chapman for years with Red Wine Audio, as he was our OEM remote-volume-control supplier. When I contacted him about helping with the control circuitry for the LIO idea that I had, he was very enthusiastic to work with me, and has played an integral role in the design of all [of the] LIO's control circuitry, as well as . . . how the modules are neatly laid out inside the LIO. John is best known in the audio world for his autoformer preamplifier kits, using 'Slagleformers' hand-wound by Dave Slagle. I asked John to implement them onto an LIO module as a premium upgrade to the already high-quality resistor stepped-attenuator volume control (RVC) module that we offer."

For years, I've been using a custom Drug-Through-The-Hudson version of Slagle's Autoformer Volume Control in my monk's-cell reference system. Unlike other passive attenuators, which typically stifle musical life and dynamics, Slagle's tapped autoformer preserves, and maybe even enhances, the way recordings project energy into the room. When I replaced the RVC and Tubestage with the plug-in Slagleformer AVC (it took about 10 minutes), I experi-

#### measurements, continued

bit data with sample rates up to 96kHz, the coaxial input 24 bits up to 192kHz, while the USB input accepted 32-bit integer data with sample rates up to 384kHz.

Measured at the Fixed preamp output, data representing a 1kHz tone at OdBFS gave a level of 2.205V. However, measured with the Resistor Volume Control (RVC) module set to its maximum, a 1kHz tone at -12dBFS resulted in a level of 10.82V into 8 ohms from the MOSFET amplifier module's outputs. This is very close to the amplifier's clipping point (see below), so the RVC and the Autoformer Volume Control (AVC) each needs to be set well below its maximum level in order to avoid overloading the amplifier module with digital inputs.

Figs. 4 and 5 show the impulse

responses, at 44.1kHz, of the Linear Phase and Minimum Phase reconstruction filters, respectively, and reveal that each filter performs exactly as advertised. Performing the test first described by MBL's Jürgen Reis—in which the DAC is fed first 44.1kHz data representing a full-scale 19.1kHz tone, then data representing white noiseboth filters behaved identically. Fig.6 shows the result of this test with Filter 1, the Linear Phase filter. The noise signal (blue and cyan traces) reveals that the audioband response extends up to more than 20kHz, with then a sharp rolloff, reaching the stopband noise floor at 24kHz. The ultrasonic sampling image of the 19.1kHz tone at 25kHz is suppressed by 110dB, and all the distortion harmonics lie at or below -93dB (0.0022%).

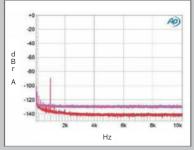


Fig. 8 Vinnie Rossi LIO, digital input, spectrum with noise and spuriae of dithered 1kHz tone at -90dBFS with 16-bit data (left channel cyan, right magenta), 24-bit data (left blue, right red) (20dB/vertical div.).

Fig.7 shows the frequency response of the LIO's digital module with sample rates of 44.1, 96, 192, and 384kHz. With all four rates, the response is flat within the audioband, and with the two lower rates it extends almost to half the sample rate before dropping off very sharply. With the two higher rates, the response starts to roll off gently above 50kHz, with the 384kHz ultrasonic response extending slightly higher than that at 192kHz. Again, the two filters behaved identically on this test.

Fed first 16-bit data, then 24-bit data, each representing a dithered 1kHz tone at exactly -90dBFS, the drop in the noise floor with the increase in bit depth was just over 10dB (fig.8), implying resolution of almost 18 bits. This test was performed with TosLink data; I repeated the test with USB data and

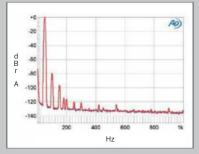


Fig.9 Vinnie Rossi LIO, digital input, spectrum of 50Hz sinewave, DC-1kHz, at 0dBFS into 100k ohms (left channel blue, right red; linear frequency scale).

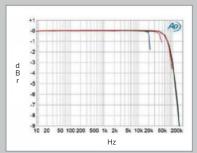


Fig.7 Vinnie Rossi LIO, digital input, Filter 1, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (1dB/vertical div.).



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With the LIO installed in my own system and fitted with the Phono module, Digital Input module, AVC, Headphone amplifier, and MOSFET amplifier, I auditioned it with LPs, through several loudspeakers:

#### Falcon Acoustics LS3/5a

The Deacon's favorite song was Stephen Foster's "Beautiful Dreamer." I doubt Dad knew who'd composed it, but every time he played it on his Columbia music console, he would say, "Shushhh! Can you hear the beauty?" When I played a recording of baritone Leslie Guinn singing this restful classic, from *Songs by Stephen Foster* (LP, Smithsonian-Nonesuch H-71268), I found myself in wonder at all the beautiful feelings and visions music can induce. Memories of my childhood came flooding back: flashing between my Bed Stuy bunker and my father's wood-paneled den in Chicago, I absolutely *could* hear the beauty.

The unique, iconic sound of dropping the needle on a black disc with the volume turned up—that attention-getting scratch of stylus on vinyl—shifted my memory machine into Drive. Almost instantly, I could hear Dad's voice and see his gold-toothed smile. The Rossi Tubestage plus phono stage



presented my father's favorite song as a deeply felt lullaby. The LIO was *extremely* good at getting out of the way and letting this music have its way with me.

The LIO drove the Falcon LS3/5a's (which I reviewed in

#### measurements, continued

got identical results, indicating that the USB input does correctly handle hi-rez data. However, I was puzzled by the appearance of very low-level spuriae at 120Hz and its harmonics in this graph, given the hefty ultracapacitor power supply, which is charged with 24V DC by the outboard supply.

The LIO correctly handled 16- and 24-bit undithered data (not shown), and offered low levels of harmonic distortion, with the second harmonic dominant at -80dB (0.01%, fig.9). Intermodulation distortion (not shown) was also very low. Tested for its rejection of word-clock jitter, the module's USB input performed very well, as

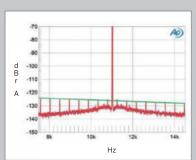


Fig.10 Vinnie Rossi LIO, digital input, highresolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit data from MacBook Pro via USB (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.

expected. There are no jitter-related sidebands present with 16-bit/44.1kHz J-Test data (fig.10), though there is an odd rise in the noise floor either side of the primary tone. This was also present with 24-bit J-Test data. However, with 16- and 24-bit TosLink data, sidebands appeared at  $\pm 60$ ,  $\pm 120$ , and  $\pm 180$ Hz. This, too, puzzled me—there should be no AC-line-related components present at all, given the LIO's massively stiff power supply.

The LIO's headphone-amplifier module follows whichever volume-control option has been fitted, and is connected in parallel with the Variable preamp outputs and the input of the

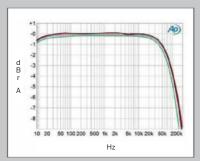


Fig.11 Vinnie Rossi LIO, Resistor Volume Control and Tubestage, volume control set to maximum, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (1dB/vertical div.).

MOSFET amplifier module, if fitted. It offered a maximum gain of 13dB with the AVC and inverted signal polarity. The output impedance was a suitably low 6 ohms at low and middle frequencies, though this rose to 18.5 ohms at 20kHz. Though the audioband response was flat and well matched between channels, I was surprised to find a 10dB peak at 35kHz with the AVC feeding the headphone module (not shown).

With line-level signals, the AVC module preserved absolute polarity (*ie*, was non-inverting). Set to its maximum level of "63," the AVC had low input impedances of 4.8 and 7.5k ohms at

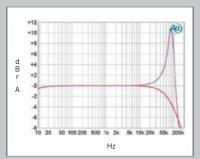


Fig.12 Vinnie Rossi LIO, Resistor Volume Control and Tubestage, volume control set to "43" (left channel blue, right red), Autoformer Volume Control set to "43" (left cyan, right magenta): frequency response at 2.83V into 8 ohms (2dB/vertical div.).





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the August 2015 issue) with something approaching perfect tone. Timbres and textures were always-enjoyable constants, no matter which recording I played. The LIO showed me that grainlessness and high-relief textures are in no way mutually exclusive. Detail, drive, and forward momentum were as good as they get.

One night, while listening to the LIO, I hauled out a wonderful recording by pianist Raymond Lewenthal, who wails as he plays and conducts *Funeral March for a Papagallo and Other Grotesqueries of Alkan* (LP, Columbia Masterworks M30234). On most any system, this LP will let the piano sound quite realistic. But forget sound—this disc is all about Raymond Lewenthal's messianic and fitfully inspired pianism. He doesn't just play the keys and pedals—he engages

The LIO delivered the best of tubes (color, vividness, liquidity) and the best of solid-state (quietness, control).



the whole instrument. I played this record with (don't laugh) a \$75 Shure SC35C moving-magnet cartridge on a \$2100 Abis SA-1.2 tonearm (I hear you laughing!) through the LIO driving the Falcon Acoustics LS3/5a's, and I swear on my best Gutenberg Bible that I have rarely in my life heard a piano sound this *real* and corporeal in my room.

#### measurements, continued

20Hz and 1kHz, respectively, and a very low impedance of just 400 ohms at 20kHz. This last will stress many tubed source components, but fortunately, the input impedance increased at lower settings. With the AVC set to "43," for example, the input impedance measured 92k ohms at 1kHz and 58.5k ohms at 10kHz. The Resistor Volume Control (RVC), set to its maximum of "63," offers unity gain and an input impedance of 28k ohms at 20Hz and 1kHz, dropping slightly to 21.3k ohms at 20kHz.

I measured the behavior of the Tubestage using the RVC module at the Variable preamplifier outputs. It offers an insertion loss of just over 0.7dB; ie, fed 1V at 1kHz, it outputs 921mV, and the module preserved absolute polarity. Its output impedance was a low 53 ohms at 20kHz and 1kHz, though this rose to 1450 ohms at 20Hz. The Tubestage was reasonably linear—with a

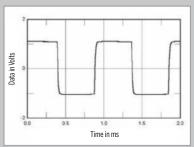


Fig.13 Vinnie Rossi LIO, Autoformer Volume Control set to maximum: small-signal, 1kHz squarewave into 8 ohms.

50Hz tone at 300mV into 100k ohms, the second harmonic was the highest in level and lay at -64dB (0.06%).

I tested the MOSFET amplifier module in four setups: 1) with the RVC module and the Tubestage; 2) with the RVC and no Tubestage, using the little bypass module in the latter's place; 3) with the AVC, which replaces both the RVC and the Tubestage; and 4) without any volume-control module, which appears to send the selected input signal straight to the amplifier module. The maximum voltage gain at the speaker terminals into 8 ohms varied with each of these conditions: 33.4dB with the AVC, and a significantly lower 25.8dB with and without the RVC or Tubestage. Comparisons among these different volume control modules will be misleading unless the different gains are compensated for.

The MOSFET amplifier module's

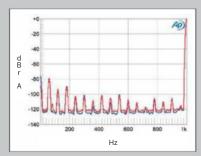
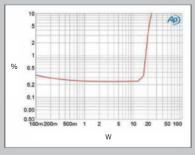


Fig.14 Vinnie Rossi LIO, Autoformer Volume Control set to maximum: spectrum of 1kHz sinewave, DC-1kHz, at 1W into 8 ohms (linear frequency scale).

input impedance was a reasonably high 40k ohms. Its output impedance was low, at 0.12 ohm at 20Hz, 0.084 ohm at 1kHz, and 0.086 ohm at 20kHz, which gave a very small variation in response with our standard simulated loudspeaker (fig.11, gray trace). Fig.11, taken with the Tubestage driving the amplifier module and the RVC set to "63," shows excellent channel matching and a wide small-signal bandwidth. However, when I repeated this test with the AVC also set to "63," a 13dB peak at 34kHz appeared. The height of this peak didn't appear to be affected by the volume-control setting, though the frequency increased at lower settings. Fig.12, for example, compares the LIO's overall frequency response, measured at the speaker terminals, with both the RVC and AVC set to "43." The RVC's ultrasonic response (blue and red traces) is identical to



**Fig.15** Vinnie Rossi LIO, Resistor Volume Control set to maximum: distortion (%) vs 1kHz continuous output power into 8 ohms.





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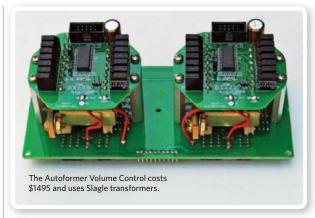
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Sure, the BBC monitors are mini, but that day they played BIG! Incredibly, I have never heard *any* digital recording reproduce a piano with this amount of texture and weighty authority. I could hear the microtextures of felt-covered wooden hammers striking the coil-covered piano strings. I could hear the effects of Lewenthal's pedaling. It was revelatory. I loved it.

#### Magnepan .7

In my review of the Magnepan .7, in the August 2015 issue, I explained how the Vinnie Rossi LIO played the .7s beautifully in my smallish room, but began to lose its breath at around 90dB. Nevertheless, I kept going back to this pairing because it brought out every last drop of sweet lushness the LIO was capable of. Record after record, I bathed in the almost fragrant beauty of the LIO plus Slagleformer plus .7s as I played all genres of music. But—if you like your music loud and louder, this pairing will *not* satisfy.

What happened was this: The Maggies need current. The LIO's power supply and MOSFET output stage have low impedance and high energy-storage capacity, and therefore can supply driving current with almost limitless grace. But as Vinnie Rossi reminded me, "As long as you play at levels



that don't exceed the rail voltage (don't push the amps into clipping), they should work very well together."

The Maggies provided a perfect opportunity to examine how the Rossi clipped. Normally, the LIO sounded very open and breathy. But when it clipped, its trachea collapsed. And when the LIO *really* clipped, it started to choke, and the music got closed-in and flat.

#### measurements, continued

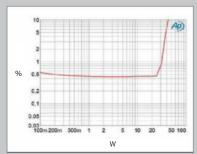
what it was in fig.11, with a -3dB point at 75kHz, while with the AVC, the 13dB peak now lies at 80kHz. The puzzle to me is that this ultrasonic peak with the AVC resulted in no overshoot or ringing with the LIO's squarewave response (fig.13). I did wonder if there was some sort of interaction between the AVC's transformers and the input of the Audio Precision test set, but then I remembered that this peak was also evident with the AVC feeding the LIO's headphone module.

The amplifier module's channel separation was good, at >90dB between 1 and 3kHz, though it dropped to 64dB at 100Hz and 78dB at 20kHz. The unweighted, wideband S/N ratio, measured with the line input shorted and the AVC set to "63," was a good

77.3dB ref. 2.83V into 8 ohms. This improved to 91.3dB when the measurement bandwidth was restricted to 22Hz-22kHz, and to 94.3dB when A-weighted. Again I was puzzled by the appearance of low-level spuriae at 60Hz and its harmonics in the amplifier's output when it drove 1kHz at 1Wpc into 8 ohms (fig.14). The AVC was connected for this measurement, and perhaps the transformers were picking up radiated magnetic interference from the computer that runs the Audio Precision software. However, moving the computer made no difference.

The LIO is specified as being able to deliver 25Wpc into 8 ohms (14dBW) or 45Wpc into 4 ohms (13.5dBW). However, with our standard definition of clipping being when the THD+noise

reaches 1%, the LIO didn't reach those powers under that condition. It clipped at 17Wpc into 8 ohms (12.3dBW, fig.15) and 30Wpc into 4 ohms (11.75dBW, fig.16). The LIO did meet its specified power into both impedances at 11% THD+N, however. Perhaps more significant is the level of THD+N at lower powers, which is fairly high. These graphs were taken with a signal frequency of 1kHz and the RVC driving the amplifier module; changing to the AVC or adding the Tubestage made no difference. But when I plotted how the THD+N percentage changed with frequency at a voltage level equivalent to 3Wpc into 8 ohms and 6Wpc into 4 ohms, it appears that the Tubestage itself contributes distortion at high frequencies. Fig.17 shows the varia-



**Fig.16** Vinnie Rossi LIO, Resistor Volume Control set to maximum: distortion (%) vs 1kHz continuous output power into 4 ohms.

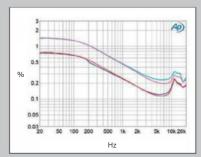


Fig.17 Vinnie Rossi LIO, Autoformer Volume Control set to maximum, THD+N (%) vs frequency at 4.9V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta).

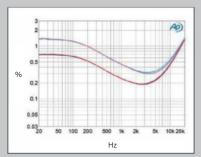


Fig.18 Vinnie Rossi LIO, Resistor Volume Control and Tubestage, volume control set to maximum, THD+N (%) vs frequency at 4.9V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta).



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#### KEF LS50

I spent a lot of my listening time playing the LIO through the KEF LS50s because the sound was so agreeably natural. The sound of the Falcon LS3/5a's through the LIO was more "alive" and had better tone character, but what the KEF-Rossi combo did best was relax, step off the stage, and let the musicians run the show.

#### **DeVore Fidelity Orangutan O/93**

Unlike RCA's Nipper, I do not have to cock my head to know when recorded music sounds exceptionally real. I can just put on an album like folk singer Susanne Rosenberg and organettist Christophe Deslignes's Out of Time and Country (CD, M•A Recordings M080A), walk out of the room, pour myself an S. Pellegrino with lemon, and then, as I walk back in, stop and think, Oh, damn—now I remember why these DeVore Orangutan O/93s have been my reference speakers since I began writing for Stereophile: They play music exactly the way I (and my little dog, Monster) like it!

My Line Magnetic LM-518 IA integrated amplifier powers the DeVores with sweet, colorful confidence. So did the Vinnie Rossi LIO. Both amps shone through the Orangutans a kind of late spring light—not too cool and dark, not too warm and bright. But when I switched from the LM-518 IA back to the LIO with the DeVores, it felt as if I'd jumped from a turbo Porsche with racing tires into a Tesla S with autopilot. The LIO has the Tesla's type of quiet power: its massive torque is applied smoothly and equally at all rpms. I experienced unprecedented naturalness of bass.

#### ASSOCIATED EQUIPMENT

Analog Sources Acoustic Signature Wow XL turntable + TA-1000 tonearm, Thorens TD-124 turntable with Abis SA 1.2 tonearm; Ortofon 2M Black & CG 25 DI II, Shure SC35C, Soundsmith Carmen, Zu Audio DL-103 phono cartridges.

Digital Source Onkyo Integra DPS 7.2 universal player; Puresound A-8000 CD player; Halide Design DAC HD and Line Magnetics LM-502CA D/A processors.

**Preamplification** Intact Audio step-up transformer; April Sound GB-1, LFD LE, Schiit Audio Mani phono stages; April Sound BB1, Simaudio Moon Neo 350P preamplifiers.

Power Amplifier Simaudio Moon Neo 330A.

Integrated Amplifiers Hegel Music Systems H160, Line Magnetic LM-518ia.

**Headphone Amplifier** Schiit Audio Asgard. **Headphones** Audeze LCD-2, Audio-Technica ATH-M50x, Bowers & Wilkins P5, Sony MDR-7520.

Loudspeakers DeVore Fidelity Orangutan O/93, Falcon Acoustics LS3/5a, KEF LS50, Magnepan .7, Morel Octave 6, Technics SB C700.

Cables Interconnect: AudioQuest Big Sur & Cinnamon & Golden Gate, Auditorium 23. Speaker: AudioQuest Type 4, Auditorium 23, Kimber Kable 8TC. AC: manufacturers

Accessories Sound Anchor stands, Dr. Feickert Analogue cartridge-alignment protractor.—Herb Reichert

#### measurements, continued

tion in THD with the AVC, fig.18 with the Tubestage. In both cases, the THD level at moderate powers is high. Fortunately for the sound quality, the distortion is heavily second-harmonic in nature (fig.19),¹ though plenty of higher-order harmonics are present, especially at low frequencies (fig.20). And given Herb Reichert's positive reaction to the LIO's sound when used as an integrated amplifier with the AVC, it is perhaps not surprising that its high-frequency intermodulation performance in this configuration, measured at a level close to visible

1Wpc into 8 ohms and one capacitor bank newly charged, the supply voltage dropped from 22.9 to 19V in exactly

was not too bad (fig.21).

three minutes, at which point the LIO automatically switched to the second bank, now freshly charged, with a just-audible click.

waveform clipping on the oscilloscope,

Finally, as the LIO is powered by

the capacitor supply, it will run only a

certain length of time from one bank

of capacitors before switching to the

other. With the LIO driving 1kHz at

I was impressed by the concept

underlying the Vinnie Rossi LIO, and its physical execution is stunning. But other than the RVC, moving-magnet Phonostage, and Digital modules, all of which offered good to excellent measured performance, there are problems with the other modules that bothered me. Of course, the benefit of the approach adopted by Vinnie Rossi with the LIO is that he can introduce running improvements to individual modules without requiring the owner replace the entire chassis.—John Atkinson

1 See Art Dudley's "Listening" column in February 2015: www.stereophile.com/content/listening-146.

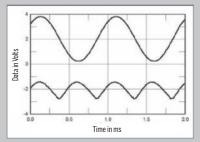


Fig.19 Vinnie Rossi LIO, Autoformer Volume Control set to maximum, 1kHz waveform at 6W into 4 ohms, 0.47% THD+N (top): distortion and noise waveform with fundamental notched out (bottom, not to scale).

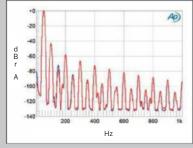


Fig.20 Vinnie Rossi LIO, Resistor Volume Control and Tubestage, volume control set to maximum: spectrum of 50Hz sinewave, DC-1kHz, at 3W into 8 ohms (linear frequency scale).

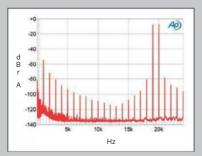


Fig.21 Vinnie Rossi LIO, Autoformer Volume Control set to maximum: HF intermodulation spectrum, DC-24kHz, 19+20kHz at 3W peak into 8 ohms (linear frequency scale).



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via the latter's coaxial output. Finally, I let the Mac

mini drive the Halide Design HD DAC. The Halide's and Line Magnetic's outputs entered the Rossi via analog inputs. With this setup, I could play a single album like John Hicks, Buster Williams,

and Louis Hayes's On the

Wings of an Eagle (SACD/

CD, Chesky JD318) and

use the Rossi's remote to



#### The LIO as preamplifier

I connected the Rossi LIO's preamplifier outputs to a variety of power amplifiers, including Simaudio's excellent, 125Wpc Moon Neo 330A (\$4300; review in the works). Used as a preamp, the LIO was just as invisible as Simaudio's famously transparent Moon Neo 350P preamplifier (\$2499; also under review). And, happily, as they disappeared, the Rossi and the Moon Neo 330A *still* managed to reveal enjoyable smidgens of tasty, just-picked freshness in every recording.

Let us pretend that I own an LIO that is doing a delightful job of playing the Magnepan .7s, but that I now want loudness levels of up to 100dB, up from a max of 90dB. No problem—I can just swap in a stronger power amp, keep the LIO as a preamp, and still retain the larger portion of the Rossi magic. (This fall, at the Rocky Mountain Audio Fest in Denver, Vinnie Rossi will introduce a standalone power amplifier that will deliver 100Wpc into 8 ohms, and can be used in lieu of the LIO's 25Wpc amplifier module.)

#### The LIO as headphone amplifier

Want to see the eye of the Cyclops? Wanna make your socks go up and down and your hair fly back? Listen to Formatia Valea Mare, a septet of six winds and percussion, play their delirious Rromani "muzika orijinal," as they call it, on their *Departe De Casa* (CD, M•A Recordings M060A) through the LIO headphone amp connected to Sony's revealing MDR-7520 headphones. The tone-perfect sounds of the tuba came right out of those eargoggles and tickled my scrotum. The accordion and clarinets massaged my heart. The trumpet and flugelhorn sounded more like sweat-stained brasses than any others I have heard.

I used the extremely neutral Vinnie Rossi headphone stage to drive each of my pairs of quite different-sounding headphones, and, more than any other headphone amp I've used here, the Rossi plainly showed me the level of colorations inherent to each.

#### The LIO as DAC

I've always called my Halide Design HD (USB) DAC (\$495) my Mac DAC because I bought it to connect my Mac mini to my Creek 4330 integrated amplifier. I loved the colorful, *nondigital* way it played high-resolution files and film scores. But nowadays, because most integrated amps I review have digital stages, the Halide, like an old horse, has been relegated to only occasional use, driving my Schiit Asgard headphone amp. And then I started thinking . . .

Because the Vinnie Rossi LIO is such a shape shifter, it seemed relevant to investigate how its DAC compared not to my memory of DACs in other integrateds, but to a pair of standalone DACs I already use and find admirable. I let my Onkyo Integra DPS-7.2 transport drive the LIO DAC via the latter's optical input. I let my Puresound A-8000 CD player drive my Line Magnetic LM-502CA DAC (\$1800)

The fully-loaded LIO auditioned by Herb Reichert offers a comprehensive selection of inputs and outputs.

shuttle among a trio of DACs.

The effect of this stratagem was edifying. The LIO made the Halide DAC sound even more soft and generous than it usually does. But surprisingly, the Halide demonstrated more bass slam and room air than I remember it ever doing. Unfortunately, this newfound slam was wasted—the Halide also sounded fuzzy and warm to the point of distraction. In comparison, the Vinnie Rossi DAC was Claritin-clear and well controlled, but less spacious and airy than the little Halide.

To further assess the LIO DAC's resolving powers, I played the dramatic and rhapsodic 11,000 Virgins, a collection of vocal music by Hildegard of Bingen, sung by Anonymous 4 (CD, Harmonia Mundi HMU 907327). Through the LIO, each of the four women's voices projected its own pure energy into the well-defined volume of the Christian Brothers Retreat, in Burbank, California. My room was transformed into that dreamy acoustic.

One day, gazing at the LIO's remote, I noticed a button: Filters. When I looked in the manual, I realized that Rossi had included it to provide a choice between the LIO DAC's Linear Phase and Minimum Phase filters. I've always been suspicious of linear-phase filters, blaming them for digital sound's metallic weirdness. So, happily, I used a bunch of tracks from Chesky and M•A Recordings to explore the differences. To my taste, Minimum Phase sounded subtly but distinctly more relaxed and colorful than Linear Phase—music felt more elastic, and seemed to move along less mechanically. But Vinnie—what about a No Filter option?

#### I could hear the beauty

The Vinnie Rossi LIO should not be understood as just another integrated amplifier—it's considerably more than that. According to Vinnie Rossi, "The LIO is designed to become the last audio component you might ever need." To my ears, it delivered the best of tubes (color, vividness, liquidity) and the best of solid-state (quietness, control). Its highly adaptable modular design combines a fashionable Italianate aesthetic with near-state-of-the-art sound. It was as musically natural as fish jumping and birds singing in trees. The LIO phono stage was nearly faultless. Its DAC was exceptional, and enjoyably nonmechanical in sound. Amazingly, the LIO's best feature might be its headphone amp.

My current gold standards for the potent, transparent reproduction of music are the Komuro PP845 and Pass Labs XA100.5 monoblocks. While the LIO didn't quite match the Nori Komuro or Nelson Pass designs in strength, dynamic ease, or richness of tone, it did come ridiculously close, albeit with a quieter, gentler personality. If there is a more innovative and musically satisfying integrated amplifier than the Vinnie Rossi LIO, I have yet to experience it.



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#### **JOHN ATKINSON**

# AudioQuest JitterBug

#### **USB NOISE FILTER**

got an early start on computer audio. At the end of the last century I was using WinAmp with first a CardDeluxe PCI soundcard.1 then a similar card from RME.2 to play files on a Windows PC. After I became a MacPerson, I used FireWire audio interfaces from pro-audio company Metric Halo and an inexpensive USB-connected ADC/DAC from M-Audio. But it was with the USB version of Benchmark's DAC 13 that the computer began taking over from physical discs for my music listening. At first I used iTunes au naturel, but as I acquired more high-resolution files, I began using Pure Music to handle all the tedious audio housekeeping, assigning as a dedicated music server a G4 Mac mini I'd bought in 2006.

When Apple stopped supporting G4 machines in 2012, I bought, on the recommendation of Pure Music's Rob Robinson, a new Mac mini fitted with a 2.7GHz Intel i7 processor and 8GB of RAM. This I now run "headless"—ie, with no keyboard, mouse, or display—under the control, via our home network, of my MacBook Pro. I've used the mini as the primary source for all of my equipment reviews since 2012; it remained continuously powered up for almost three years without any problems until, one day this past June, it died.

According to the Apple Genius Bar

#### SPECIFICATIONS

Description USB line (VBUS) and signal (data) filter. Input: USB Type-A male. Output: USB Type-A female. Dimensions Very small.

Weight: very little.

**Price** \$49. Approximate number of dealers: 1200.

Manufacturer AudioQuest, 2621 White Road, Irvine, CA 92614. Tel: (949) 585-0111.

Web: www.audioquest.com.



near the *Stereophile* office, not only had the mini's internal power supply failed, its logic board was toast: It might take a week to repair it, depending

on the availability of parts. Assuring the genius that I'd backed up my data with Apple's Time Machine utility, I left it with him and returned home to a week of playing CDs on my Ayre Acoustics C-5xe<sup>MP</sup> universal player.

#### **Enter the JitterBug**

This is when things got weird. Every disc I played sounded more solid, more corporeal than I remembered from the many times I'd played the same tracks from the Mac mini. The low frequencies sounded more authoritative, much as they had when I bought a Mark Levinson No.31 CD transport (now long since retired with mechanical problems). In hindsight, the system's sound with the computer-audio source now seemed consistently more ethereal. With one exception.

Before the Mac failed, I'd been experimenting with a sample of Audio-Quest's JitterBug that I'd been given at the 2015 Consumer Electronics Show. The JitterBug, a small device costing \$49, resembles a USB memory stick in size and appearance, except that it has a female Type-A USB port on the other end from the usual Type-A male plug. It is intended to be plugged into the computer's USB port, with the

AudioQuest says that the JitterBug conditions both the 5V voltage connection and the biphase data connections.

USB DAC plugged into its other end. According to AudioQuest, there is also a sonic benefit if a JitterBug is plugged into any unused USB port in any device that's connected to your system—even ports on devices that aren't in the direct signal path, such as a NAS or a router. However, AudioQuest warns against using more than two JitterBugs on one USB bus or in series.

#### **Under the hood**

The JitterBug is a purely passive device. All of its components—small numbers of surface-mount resistors, capacitors, inductors, and what appear to be common-mode chokes—are carried on a small, multilayer printed circuit board connecting the input and output ports. This board is housed in a plastic case just wide enough to prevent two JitterBugs from being plugged into the adjacent horizontal USB ports on my 2011 MacBook Pro. The case is also slightly too thick for two JitterBugs to be plugged, side by side, into the verti-

<sup>1</sup> See www.stereophile.com/computeraudio/280/index.html.

<sup>2</sup> See www.stereophile.com/computeraudio/299/index.html.

<sup>3</sup> See www.stereophile.com/digitalprocessors/108bench/index.html.



# **HA-1** Headphone Amplifier, **Pre-Amplifier, & DAC**

Every facet of the HA-1 is designed to provide a pristine listening experience—from the Class A amplifier, to the DSD256 support, to a high performance ESS 9018 SABRE<sup>32</sup> 32-bit Reference DAC with PCM support up to 384 kHz, to the clean power from a custom toroidal power transformer, to the fully balanced design and XLR & RCA inputs and outputs. When your ears decide that "good enough" just isn't enough for them anymore, then they're ready for the HA-1.

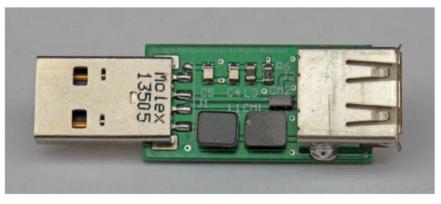


OPPO Digital, Inc. | www.oppodigital.com | Mountain View, CA









The JitterBug eliminated what I described as the "ethereal" character of computer audio.

cal USB ports on my Mac mini. (For my listening, I used a short USB extender cable to plug the second JitterBug into one of the ports of both computers.)

A USB connection comprises just four electrical contacts. The outer pair carries 5V DC (VBUS) and the supply ground; the inner pair carries the data signal in an antiphase, packet-based format, one element of this pair labeled Data Positive, the other Data Negative. When the positive data are at 3V, the negative data are at 0V, and vice versa, so

that any noise contamination in the line will be common-mode and thus be rejected by the data receiver. The signal level doesn't

change for a logic 1, but the signal level is inverted for each change to a logic 0. Each packet consists of a sync byte, followed by a packet-identification byte, then the data, and then error-checking bytes calculated from the data's content. If the error checking detects a problem in the packet's transmission, the receiver asks the source to resend that packet; otherwise, the source is asked to send the next packet. The USB receiver stores the incoming data in a temporary buffer before forwarding it to its destination.

#### **MEASUREMENTS**

t's difficult to decide how to characterize the measured performance of products, such as AudioOuest's JitterBug, that don't operate directly on the analog signal. Yes, there exist USB bus analyzers—available from such companies as Tektronix—that Wavelength's Gordon Rankin, one of the JitterBug's designers (along with Garth Powell), uses. These can examine various issues affecting data transmission: data-packet errors, jitter, noise, etc. However, they cost tidy sums—too much for me to be able to justify to my paymasters that Stereophile buy one for use in a single review.

So, on the well-established but far from proven principle of "if something

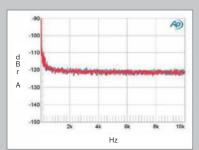


Fig.1 PS Audio DirectStream with (left channel blue, right cyan) and without (left red, right magenta) two JitterBugs, spectrum of balanced analog output signal, OHz-10kHz, with 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 24-bit data via USB from Mac mini.

can be heard, it must be capable of being measured," I used my Audio Precision SYS2722 system (see www. ap.com and the January 2008 "As We See It," www.stereophile.com/content/ measurements-maps-precision) to look at the outputs of three of the D/A processors I used in my listening: a first-generation AudioQuest DragonFly, a Meridian Explorer, and a PS Audio PerfectWave DirectStream. With each signal, I used first no JitterBug; then one JitterBug, in series with the computer's USB port; and then an additional JitterBug, plugged into a second USB port. Sources were both the i7 Mac mini (back from the Apple Genius Bar with a new logic board and

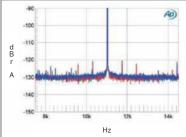


Fig.2 AudioQuest DragonFly with (left channel blue, right cyan) and without (left red, right magenta) two JitterBugs, spectrum of analog output signal with 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 24-bit data via USB from Mac mini. Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.

power supply) and my MacBook Pro, this powered both from its battery and from its wall-wart supply.

I used four 24-bit files, all sampled at 44.1kHz, with each of the two computers, three DACs, and three computer conditions: 1kHz tones at OdBFS and -90dBFS; a 19.1kHz tone at OdBFS; and the undithered Miller-Dunn J-Test signal (an 11.025kHz tone at -6dBFS plus an LSB-level squarewave at exactly 229.6875Hz).

As you can calculate, these tests generated an enormous amount of data. Sad to say, in almost all the tests, I could find no measurable difference between the analog signals, whether there were two, one, or no JitterBugs associated with the USB ports in use. Fig.1 is typical. It shows a narrowband spectral analysis of the noise floor below 10kHz of the PS Audio's balanced analog output while the DAC decodes the 24-bit J-Test data. Even with the expanded vertical scale, the traces with two JitterBugs—one in series, one in parallel (left channel blue, right cyan) — overlay those with no JitterBug (red, magenta).

In only two test conditions did I find that the JitterBug made a consistent and repeatably measurable difference. First, with the AudioQuest DragonFly fed 24-bit J-Test data from the Mac mini, the two JitterBugs (fig.2, blue and



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AudioQuest says that the JitterBug conditions both the 5V voltage connection and the biphase data connections, restricting the connection's radio-frequency bandwidth to that appropriate for USB 2.0's maximum specified data rate of 480Mbits/s. As a result, there are said to be improvements in signal/noise ratio and reductions in jitter and parasitic resonances.

#### Listening

Back in October 2011, Stereophile spun off AudioStream.com, edited by Michael Lavorgna, to cover computer audio; earlier this year, Michael enthused over the AudioQuest JitterBug: "49 bucks buys you some of the soundest improvements I've heard for anywhere near the price." He later wrote, "I've now heard the JitterBug do its thing... a number of times in different systems and I easily heard sonic improvements each time." I have learned to

## The low frequencies acquired more of the authority I experience with CDs.

trust Michael's ears. Even so, I wasn't expecting the *degree* of improvement the JitterBug wrought with the first recording I played, comparing the sound with and without the 'Bug, via my newly repaired Mac mini. (The following comments are an amalgam of my experience with all the DACs I used for the comparisons.)

The low frequencies acquired more of the authority I experience with CDs. A song that has stuck with me for more than three decades is "Wallflower," from Peter Gabriel's fourth solo album, *Security* (original UK CD,

4 See www.audiostream.com/content/audioquest-jitterbug and 'content/audioquest-jitterbug-0.

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#### measurements, continued

cyan traces) eliminated the sidebands at  $\pm 1430$  Hz, and reduced the levels of the sidebands at  $\pm 715$  Hz by around 5dB (red, magenta), as well as the noise floor. Second, with the laptop feeding the DragonFly 24-bit data representing a dithered 1kHz tone at -90dBFS, a spurious tone at 350 Hz was very slightly lower with two Jitter-Bugs (fig.3, blue and cyan traces) than it was without them (red, magenta).

It's difficult to see how these measured differences correlate with the improvement in sound quality I heard with the JitterBug. To put these differences into context, fig.4 repeats the test used to generate fig.3 with no JitterBugs, but with the laptop pow-

AD AD

Fig. 3 AudioQuest DragonFly with (left channel blue, right cyan) and without (left red, right magenta) two JitterBugs, spectrum of 1kHz sinewave via USB from MacBook Pro, DC-1kHz, at +90dBFS into 100k ohms (linear frequency scale).

ered first by its battery (blue and cyan traces), then by its AC supply (red, magenta). Though the AC-supply-related spuriae are very low in absolute terms—note the greatly expanded vertical scale of all these graphs—they are still higher in level than any changes I could find with the JitterBug. I also couldn't hear any difference with the DragonFly between the MacBook Pro powered by its battery and by its external AC supply.

While measuring the effect of the AudioQuest JitterBug didn't prove to be a complete snipe hunt, it also didn't reveal why using the JitterBug improved the sound—which it most certainly did.—John Atkinson

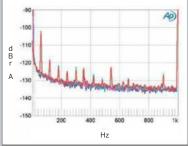


Fig. 4 AudioQuest DragonFly, spectrum of 1kHz sinewave via USB from MacBook Pro powered by battery (left channel blue, right cyan) and by AC adapter (left red, right magenta), no JitterBugs, DC-1kHz, at -90dBFS into 100k ohms (linear frequency scale).

-120

## Which can make the biggest difference in your sound?

Addressing how electrons flow in circuits, output devices, and cables?

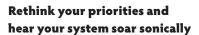
OR

Addressing the acoustic wave launch into your room and how it is received at your seat?

#### It's not even close...

Fabulous electronics and cables, in a system poorly integrated with the room, will most certainly NOT sound fabulous. In fact, an average amplifier with average cables, but in a system that is properly "Playing the Room," will exceed the sound quality of a

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#### ASSOCIATED EQUIPMENT

**Digital Sources** Ayre Acoustics C-5xeMP DVD-A/SACD/CD/MP3 player, Apple 2.7GHz i7 Mac mini running OS 10.10.3 & MacBook Pro running OS 10.7.5, both with iTunes 11, Pure Music 2.0, Audirvana Plus 1.5.10; AudioQuest DragonFly, Meridian Explorer, PS Audio PerfectWave DirectStream D/A processors.

Preamplification Ayre Acoustics KX-R Twenty line preamplifier, Bel Canto Black ASC-1 digital preamplifier.

Power Amplifiers Ayre Acoustics MX-R Twenty, Bel Canto Black MPS1, MBL Corona C15 (all monoblocks).

Loudspeakers GamuT RS7.

Headphones AudioQuest NightHawk,

Cables Digital: AudioQuest Coffee, Belkin Gold USB. Interconnect (balanced): Cardas Clear. Speaker: Cardas Clear (with Ayre, MBL), Kubala-Sosna Elation! (with Bel Canto). AC: Kubala-Sosna Elation!, manufacturers' own. Accessories Target TT-5 equipment racks; Ayre Acoustics Myrtle Blocks; ASC Tube Traps, RPG Abffusor panels; Shunyata Research Dark Field cable elevators; Audio Power Industries 116 Mk.II & PE-1 AC line conditioners

(hard drive, computers). AC power

comes from two dedicated 20A cir-

cuits, each just 6' from breaker box.

Sennheiser HD-650.

—John Atkinson

Charisma 800 091-2). This very early (1986) CD suffers from the ills endemic to the primitive digital transfers of those days, but I've found that every improvement I make in my system pushes those ills a little further into the background. Listening to the ALAC file ripped from the CD, the dramatic tom-tom strokes that punctuate the buildup to the song's anthemic refrain sounded more solid, better defined in space and time, with the JitterBug. Similarly, with Phish's cover of Little Feat's "Time Loves a Hero," recorded live in 2010 (16/48 FLAC, downloaded from www.livephish.com), the drums and bass guitar both had more impact, and were better differentiated in the mix.

But it was in the midrange that the JitterBug most strenuously announced its presence. In my review of GamuT Audio's RS speaker elsewhere in this issue, I mention Leonard Shure's performance of Schubert's Piano Sonata in B-flat, D.960 (24-bit/96kHz WAV files). Antony Tommasini of the New York Times had written, of the CD of this performance (Audiofon CD 72010), that Shure's piano sounded clangorous in some of the most impassioned fortissimos. Without the JitterBug, yes, it does; with the JitterBug, the piano sounded more natural, more smooth in these passages.

The same was true with Martha Argerich's live performance of Rachmaninoff's Suite 2 for Two Pianos, with Gabriela Montero (ALAC files ripped from CD, Warner Classics 623594). Not only did the two pianos sound more liquid in the midrange

with the JitterBug, there was a better sense of those pianos as physical objects/instruments in space. Similarly, the applause sounded more like hands clapping than generic noise.

These specific comments were all gleaned from my listening to the JitterBug in my big rig, with the PS Audio PerfectWave DirectStream and Bel Canto Black DACs. To check that I wasn't imagining things, I repeated much of my listening using a first-generation AudioQuest DragonFly and a Meridian Explorer, primarily with Sennheiser HD-650 headphones.

Overall, I would say that the JitterBug eliminated what I described as the "ethereal" character of computer audio, bringing it very close to what I experience from spinning CDs.

#### Conclusions

You can see from the "Measurements" sidebar that I could find no significant effect that the JitterBug had on the analog signals output by three of the DACs I had to hand. Yet with those DACs and others, I heard an improvement in sound quality that I can attribute only to the JitterBug. I hate when that happens!

Last June, Michael Lavorgna wrote that "measurements obviously have no direct correlation to enjoyment." have no hesitation in declaring, loudly and longly, that I can think of no way to spend \$49 that would make me more enjoy my computer-based audio than the AudioQuest JitterBug. Try one—or two—for yourself. ■

5 See www.audiostream.com/content/proof-poof.





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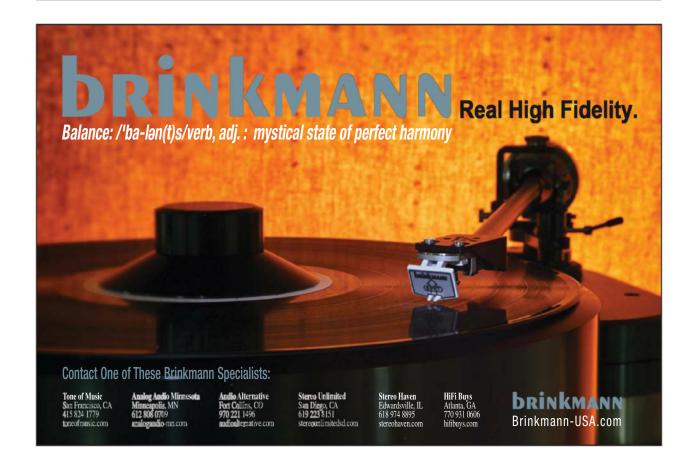
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#### FOLLOW-UP BY JOHN ATKINSON

THIS ISSUE: Wilson Benesch's Square One Series 2 stand-mounted speaker is run through its paces in JA's test lab.

#### Wilson Benesch Square One Series 2 loudspeaker

John Marks enthused about this elegantly finished stand-mounted speaker from England<sup>1</sup> in his column in the August 2015 issue of Stereophile, and included a quote from his September 2004 column: "The Square Ones have much of the same technology and the same build quality as Wilson Benesch's more expensive models . . . and provide a smaller-scaled version of WB's house sound: 'extremely low distortion, seamless coherence, unfussy easefulness, rounded liquidity of tone, articulate dynamics, and seductively natural imaging and soundstaging." John concluded that "the Square One is a standout performer that I think absolutely deserves a very high Class B (Restricted LF) rating in our 'Recommended Components.'

High praise indeed. I asked John to send me the review samples (serial nos. 01240A and B) so I could perform my standard set of measurements. As always, I used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the speaker's frequency response in the farfield, and an Earthworks QTC-40, with its small, ½"-diameter capsule, for the nearfield responses.

The Wilson Benesch Square One Series 2 is specified as having a voltage sensitivity of 87dB/2.83V/m. My estimate was a little lower,

at 85.7dB(B)/2.83V/m, perhaps due to a lack of low-treble energy in the frequency response (see below). The specified nominal impedance is 6 ohms, with a minimum value of 4 ohms, but, as the solid trace in fig.1 shows, the Square One's impedance drops below 8 ohms only briefly, in the lower midrange, and the minimum impedance magnitude is 6.77 ohms at 235Hz. The phase angle of the impedance is generally low, which means that, taken with the highish impedance, the Square One will be very easy to drive.

Small discontinuities in the impedance traces between 500 and 600Hz and just above 1kHz hint at the presence of resonances of some kind. I did find a resonant mode at

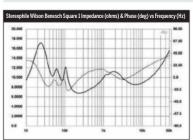
508Hz on the top panel (fig.2), though this is a little lower in frequency than the impedance wrinkle. There was also a stronger mode, at 359Hz on the side panel (not shown). I don't believe either mode will affect the speaker's sound quality.

With a rear-facing acoustic bass

1 The Square One Series 2 costs \$3800/pair, plus \$1395/pair for matching stands. Wilson Benesch Ltd., Falcon House, Limestone Cottage Lane, Sheffield S6 1NJ, Yorkshire, England, UK. Tel: (44) (0)1142-852656. Web: www.wilson-benesch.com. US distributor: The Sound Organisation, 159 Leslie Street, Dallas, TX 75207. Tel: (972) 234-0182. Fax: (972) 234-0249. Web: www.soundorg.com.



radiator (ABR) and two downward-facing ports, the Square One's low-frequency alignment is complex, though Wilson Benesch says that the ABR absorbs and controls the energy radiated by the rear of the woofer cone, and that the combination of the ABR and ports "[enhances] bass performance and extension." The red trace in fig.3 shows the summed outputs of the ports—they behave identically—measured in the nearfield. The double peak is most unusual, though the ports roll off below 50Hz with the usual second-order slope. The green trace in this graph is the nearfield response of the ABR, plotted in the ratio of its radiating diameter to that of the woofer. It peaks sharply at 100Hz, coincident with the



**Fig.1** Wilson Benesch Square One, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

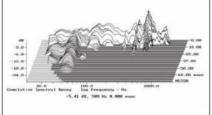


Fig. 2 Wilson Benesch Square One, cumulative spectraldecay plot calculated from output of accelerometer fastened to center of top panel (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).



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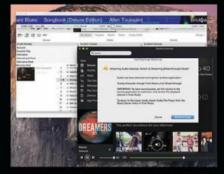
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upper peak in the ports' output, and rolls off above 110Hz and below 70Hz with a fourth-order slope. Its output is actually in antiphase to that of the woofer in the midbass, and even compensating for the fact that it's mounted on the rear of the enclosure, adding its nearfield output to that of the woofer gives a sharply defined notch at 61Hz.

The black trace in fig.3 shows the woofer's nearfield output below 355Hz and its farfield response on the tweeter axis above 355Hz. The peak just above 1kHz coincides with the high-frequency wrinkle in the impedance traces. Above that peak, the woofer is crossed over to the tweeter (blue trace) at the specified 5kHz with second-order filter slopes—the original Square One used a first-order crossover-but there is significant overlap between these drivers. Both units are impressively flat on axis above 1.5kHz, but the overlap in the crossover region gives rise to a peak between 3 and 7kHz in the overall response averaged across a 30° horizontal window on the tweeter axis (fig.4). Concerned that this behavior, measured with sample 01240A, may not be typical, I looked at sample 01240B. It measured identically—in fact, the matching of the pair was superb, any difference between the two samples being less than 0.5dB over almost the entire audio band. Figs. 3 and 4 were taken without the grille; repeating the measurement with the grille slightly increased the height of the mid-treble peak and introduced a small suckout centered on 8kHz.

The trace below 300Hz in fig.4 shows the complex sum of the nearfield responses of the woofer, ABR, and port. Some of the apparent peak between 90 and 200Hz in this graph will be an artifact of the nearfield measurement technique, but the alignment does appear to be underdamped overall. The ultimate rolloff seems closer to third-order, 18dB/octave, rather than the usual 24dB/octave of a ported design. But with a –6dB point of 80Hz or so, the Square One doesn't offer significant low-frequency extension, I feel.

Fig.5 shows the Wilson Benesch's horizontal dispersion, referenced to the output on the tweeter axis. The contour lines are even across most of the audioband, indicating a well-controlled radiation pattern, though the Square One is a little more directional above the cursor position at 3200Hz than is usually the case with a small speaker. This might well work against

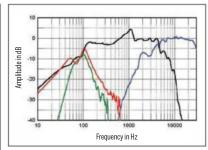


Fig.3 Wilson Benesch Square One, acoustic crossover on tweeter axis at 50", with nearfield responses of: woofer (black), ABR (green), ports (red), plotted below 350Hz, 350Hz, 600Hz.

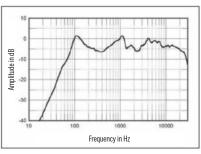


Fig. 4 Wilson Benesch Square One, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with complex sum of nearfield responses plotted below 300Hz

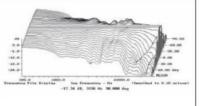


Fig.5 Wilson Benesch Square One, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

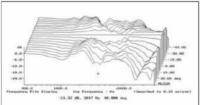
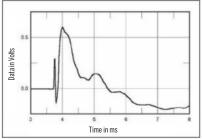
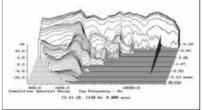


Fig. 6 Wilson Benesch Square One, vertical response family at 50", normalized to response on tweeter axis, from back to front: differences in response 45–5° above axis, reference response, differences in response 5–45° below axis.



**Fig.7** Wilson Benesch Square One, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).



**Fig. 8** Wilson Benesch Square One, cumulative spectral-decay plot on tweeter axis at 50" (0.15ms risetime).

the audibility of the crossover-region peak in larger rooms, though the top octave will sound rather too mellow in those rooms. In the vertical plane (fig.6), the use of first-order crossover filters makes the speaker's response very dependent on the listening axis. This graph suggests that placing the speakers on high stands so that the listener sits between 5° and 10° below the tweeter axis might give the optimal treble balance.

Turning to the time domain, the Square One's step response on the tweeter axis (fig.7) reveals that both drive-units are connected in positive acoustic polarity, with the decay of the tweeter's step smoothly blending into the start of the woofer's step. But the latter is disturbed by an undula-

tion with a period of just less than 1 millisecond, visible in the cumulative spectral-decay plot (fig.8) as a ridge of delayed energy centered on the frequency of the on-axis peak. Other than that, however, the spectral decay is impressively clean from 2kHz up.

I'm puzzled both by the Wilson Benesch Square One Series 2's measured performance and by John Marks's praise for its sound quality. This is a not-inexpensive loudspeaker, and while its fit'n'finish are to a quality commensurate with its price, it's difficult for me to see how its rather peaky treble response is outweighed by its shallower-than-usual low-frequency rollout, well-controlled horizontal dispersion, and clean decay in the treble.—John Atkinson



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#### CLASSICAL ROCK / POP JAZZ

## RECORD REVIEWS •

he world's leading figure in orchestral jazz has not released a jazz recording in eight years. In her liner notes, Maria Schneider says, "This album was funded by my ArtistShare fan base. Making a recording like this is becoming increasingly difficult and would now be impossible without the generous support of my many participants."

Today, big jazz bands rarely tour. Some are stable entities, but on a part-time basis. Most, like Schneider's, come together for projects, then go their separate ways. Yet against all odds, large-ensemble jazz survives because no other format offers its range of expression and its power.

Schneider worked with Gil Evans toward the end of his life, as copyist and collaborator. She is his direct artistic descendant. Like Evans, she uses orchestral colors and dynamics to devise dramatic narratives. To say that her work is the feminine version of Evans is too simple. Her touch is lighter and sometimes more whimsical, but her capacity for grandeur is just as credible. Her music is more intimate, more explicitly autobiographical.

She has said, "The foundation of my life is deeply embedded in the landscape." Her new album, The Thompson *Fields*, is a 77-minute tone poem to the land where she grew up, in southwestern Minnesota: its ever-changing light, its starkness, its spectacular skies, its extremes of weather. For Schneider, sensory perception and emotional memory are inextricable.

Its intermittent performance and recording schedule notwithstanding, Schneider's band has a 20-year history and a specific identity. It contains many of the best ensemble players in New York. Some, like trumpeters Greg Gisbert and Tony Kadleck, trombonists Keith O'Quinn and George Flynn, and bassist Jay Anderson, have been with Schneider from the beginning. The solo firepower is formidable. Saxophonist Donny McCaslin, trombonist Marshall Gilkes, guitarist Lage Lund, and pianist Frank Kimbrough are

#### **EDITOR'S PICK** RECORDING THDMONTH



#### MARIA SCHNEIDER ORCHESTRA

The Thompson Fields

Maria Schneider, composer, arranger, conductor; 18-piece orchestra ArtistShare AS0137 (CD). 2015. Maria Schneider, Ryan Truesdell, prods.; Brian Montgomery, eng. DDD. TT: 77:25 PERFORMANCE ★★★★★
SONICS ★★★★

world-class improvisers. Saxophonists Rich Perry, Steve Wilson, and Scott Robinson are revered sidemen who thrive in the creative environment of a Schneider orchestra.

Individually and collectively, they have never sounded more cohesive or more passionate. The opening track is "Walking by Flashlight." Robinson portrays its wisp of melody on an obscure, lovely instrument: alto clarinet. The full ensemble slowly comes into being and looms behind Robinson like a choir made of wind. The next piece, "The Monarch and the Milkweed," explores one of Schneider's recurrent themes: the interdependence of living things in the natural world. It is necessarily intricate, beginning in delicacy, then gathering force to sweep and soar. Gilkes and Gisbert take deep, searching solos. "Arbiters of Evolution" pursues a related topic, but more aggressively. Birds have long been muses

for Schneider. (One of her best compositions, "Cerulean Skies," from Sky Blue, is about the miraculous fulfillment of bird migration.) The "arbiters" here are birds of paradise. McCaslin and Robinson, on tenor and baritone saxophones respectively, break clear, circle, and return.

The title track refers to the Thompson farm, owned by friends of the Schneider family. The hardcover CD booklet contains radiant color images of its fields, rutted lanes, and silos-the vistas of Schneider's childhood. The foldout photographs are by Briene Lermitte, who is as crucial to this project as the band's principal soloists. The yearning melody of "The Thompson Fields" is like memory itself, on the margins of the mind, coalescing to completion. The simple motif returns again and again, in the varied voices of different sections of the orchestra. Kimbrough and Lund, inspired, are wild and free within that melody.

"Home" has a single solo, a long ascent toward release and acceptance. "A Potter's Song" is a eulogy for the late Laurie Frink, a trumpeter and flugelhornist who was an original member of Schneider's orchestra. The accordion solo, by Gary Versace, is one part sadness, two parts tribute, three parts celebration.

The sonic quality of this album, recorded at Avatar Studios, in New York, by Brian Montgomery, is balanced, objective, and natural.

Schneider's management of such technical elements as harmonic shading and thematic modulation is impeccable. Far more important is her gift for creating music identical with emotion. Only 54, she has lived long enough to look back on her life through time's fading light, and to have known change, including the passing of much that she loved. Music is her means of holding on to what would otherwise be lost. It is everyone's hope. If you are able to cry over a piece of music, The Thompson Fields will make you cry. It is available exclusively at MariaSchneider.com and ArtistShare.com. -Thomas Conrad

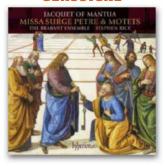
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#### CLASSICAL



#### JACQUET OF MANTUA Missa Surge Petre & Motets

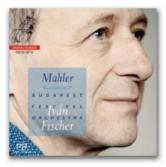
Missa Surge Petre, Ave Maria, O vos omne, In illo tempore . . . Non turbetur, O pulcherrima inter mulieres, Domine, non secundum peccata nostra Stephen Rice, The Brabant Ensemble Hyperion CDA68088 (CD). 2015. Anthony Pitts, prod.; Phil Rowlands, eng. DDD. TT: 76:39

PERFORMANCE \*\*\*\*

Not exactly a household name, Jacquet of Mantua (1483-1559) worked at the Court Chapel of the Gonzaga family, in Mantua, a half century before Monteverdi, and has been confused with the exactly contemporaneous composer Jacquet of Berchem. And because he was born in Brittany and wrote Latin masses, he was called Jachet or Jacques or Iachetus. His beautifully melodic music is ravishing; more complex than the much-earlier Dufay, Jacquet's style is an outgrowth of Josquin and a precursor of Palestrina. In short, in Jacquet's music can be heard bits of the entire history of Renaissance polyphony.

Acknowledging that less-than-careful listening can render *all* Renaissance polyphony a gorgeous, circular blur, there's something special about how Jacquet uses dynamics and slight tempo changes to catch our attention. The Mass's *Gloria* begins typically joyfully, and after five of its six minutes we suddenly realize that its polyphony has begun to spin; the *Credo* is meditative in the extreme, and each time it gets too dense Jacquet resorts to a whisper and a moment's rest before beginning again. The *Agnus Dei* suspends time.

The motets are just as filled with surprises; a little *Ave Maria* is for women's voices only. In fact, either the glorious 13-voice Brabant Ensemble, with its seven women, or Jacquet, or the recording prefers the high voices—not a critique, just an observation. If you don't know Jack, this is a perfect introduction.—Robert Levine



**MAHLER**Symphony 9

Iván Fischer, Budapest Festival Orchestra Channel Classics CCS SA36115 (SACD/CD). 2015. Hein Dekker, prod., eng.; Jared Sachs, eng. DDD. TT: 75:55

PERFORMANCE \*\*\*\*

This is second only to Riccardo Chailly's Decca reading; neither has an axe to grind. Leonard Bernstein, normally the go-to guy for Mahler, wrings every depressing, death-affirming moment out of the score: his last movement takes a half hour. Chailly, too, is very slow in that Adagio, and certainly no one has ever met the 18 minutes it takes Bruno Walter on a (sonically unacceptable) 1938 recording. Iván Fischer takes just under 23 minutes, and he's far from merry, believe me. But there's an ongoing argument over whether this symphony is a welcoming of death, or an acceptance and moving on: under Fischer's baton, it works both ways. (The moaning strings that begin the symphony, and a recurring tune throughout, are quotes from a Johann Strauss II waltz called *Enjoy Life.* Mahler being wry?)

The spectacular recording, wideopen and somewhat closely miked but sounding natural, lets us appreciate the first movement's delicate, weird birdcalls for piccolo, flute, oboe, and violin, as well as the cataclysm that precedes them; the dances of the second movement are properly snide and feature wonderful squealing from the winds, leading up to the very quiet final notes from a duet of contrabassoon and piccolo (!). Fischer doesn't overdo the craziness of the Rondo - Burlesque, but it's pretty wild nonetheless. The finale is simply beautiful; its complicated polyphony and sad, relentless tune, its mammoth upheaval and improbably long, quiet final two minutes have rarely sounded this glorious. If it's stretched too long, as with Chailly and Bernstein, it can seem lugubrious; not so here. A real winner.-Robert Levine

#### ROCK/POP



**GIANT SAND** Heartbreak Pass

New West NW6319 (CD). 2015. Howe Gelb, prod.; Ali Chant, Asger Christensen, Dave Draves, Francesco Giampaoli, Takedo Gohara, Jason Lytle and others, engs. ADD? TT: 49:36

PERFORMANCE SONICS

The book on this umpteenth album that Tucson's Howe Gelb has released under the Giant Sand banner (he's also made nearly a dozen solo records) is that it commemorates 30 years of music making. But rather than compile a greatest-hits collection, Gelb called on a host of old friends and current bandmembers to do his conjuring, resulting in a stylistic collage encompassing everything from desert rock, alt-country, and psychedelia to loungey jazz, winsome folk, and piano balladry. The strategy paid off. Heartbreak Pass is the most consistently enjoyable Giant Sand record in ages.

No single tune here is qualitatively better than another. They're just different, gaining strength via proximity—like the way blazing garage raveup "Hurtin' Habit" (featuring Sonic Youth's Steve Shelley on drums) segues into the weird, effects-drenched, sci-fi rock of "Transponder" (that's John Parish, Grandaddy's Jason Lytle, and erstwhile Sand bassist Paula Jean Brown pitching in); or how the twangy "Man on a String" makes perfect sense coming immediately after the countryish, mariachi-fueled pop of "Every Now and Then."

You might think that an album featuring no fewer than 13 different engineers (make that 16—three of the musicians are credited as recording their parts themselves) could've been a sonic mess, but somehow Gelb has achieved consistency. Even though the sound of *Heartbreak Pass* is sometimes intimate to the point of claustrophobic, no seams show.

Heartbreak Pass, with its freewheeling vibe and woozy surreality, grows on you with each listen.—Fred Mills

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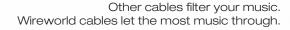
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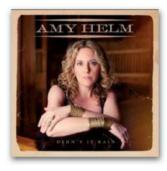






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**AMY HELM** Didn't It Rain

eOne Music 5264 (CD). 2015. Levon Helm, exec. prod.; Byron Isaacs, prod.; Daniel Littleton, eng. ADD? TT: 45:34

PERFORMANCE \*\*\*

Amy Helm's debut is a literal outgrowth of daddy Levon's legendary barn concerts, the Midnight Rambles. Amy sang and played mandolin in her father's band, and was a key member of Levon's career curtain call: the farewell lap that produced the awardwinning albums Dirt Farmer and Electric Dirt. Being part of her dad's band was a dream come true that Amy shared with her partner from Ollabelle, bassist Byron Isaacs. With four Ollabelle CDs and a spot in Levon's band, there was no need for Amy to go out on her own. That changed with Levon's death, in 2012. Now Amy carries on the tradition, and Didn't Ít Rain more than lives up to the responsibility. Recorded in Levon's Woodstock studio with a core band of Isaacs (who cowrote most of the songs), guitarist Don Littleton, and drummer David Berger (Levon recorded three drum tracks for the album before he died), Didn't It Rain epitomizes the folk-rock tradition that evolved into what we now call Americana. The album's often grooveheavy instrumental work is in service to an array of singers, led by Amy in a selection of well-crafted originals and shrewd, knowing covers: of Sam Cooke's "Good News," Mary Gauthier and Beth Nielsen Chapman's "Gentling Me," Martha Scanlan's "Spend Our Last Dime," and the traditional title track. The list of guests includes Larry Campbell, John Medeski, Bill Payne, and Jim Weider. But it's in her tribute to Levon, the heartbreaking "Sing to Me," and simple folk songs like "Deep Water" and "Wild Girl," that Amy Helm fully shows her soulful connection to her father's homespun genius.-John Swenson



**JASON ISBELL**Something More than Free

Thirty Tigers/Southeastern 96859 94597 (CD). 2015. Dave Cobb, prod.; Matt Ross-Spang, eng. AAD? TT: 43:35

PERFORMANCE \*\*\*\*

SONICS \*\*\*\*

If your point of reference for Jason Isbell is the dexterous, graceful guitarist who played that lovely 12-string electric Hagstrom in "Carl Perkins' Cadillac," for the Athens, Georgia-based Drive-By Truckers, you're in for a treat. Though Isbell's solo recording career began in 2007, it was Southeastern (2013) that really caught people's attention with deliciously melodic, introspective songs that seemed to share more songcraft with Paul Simon than with Isbell's brasher Trucker brothers. Southeastern won 2014's Americana Music Association Album of the Year award-and Something More than Free is better.

Recorded at Nashville's Sound Emporium Studio (Waylon and Willie; Raising Sand), the record is filled with warmth and space. Isbell's voice oozes from the speakers like nectar—intimate like John Prine in the reflective "If It Takes a Lifetime," confidential like Jackson Browne or Jules Shear in "24 Frames."

Isbell is a wise and gifted writer of lyrical, metamodern lyrics. In "Flagship," he sees a couple in the corner of a bar, a thousand miles apart: "Baby, let's not ever get that way," he sings with equal parts hope and sadness. In the title track—one of several with gorgeous, high-lonesome fiddling by Isbell's wife, Amanda Shires—Isbell puts himself in the shoes of an articulate but exhausted man who earns his living with his hands: "But I thank God for the work." It's inspired by Isbell's dad.

Song after song becomes more colorful and poignant with each listen. This part-folk, part-country, part-rock philosophy has had its luminaries since the days of McGuinn and Parsons, but few have been so convincing. —David Sokol



GIORGIO MORODER Deja-Vu

RCA/Sony Music 88875057251 (2 LPs). 2015. Michael Smidi Smith, exec prod.; Giorgio Moroder, Patrick Jordan Patrikios, others, prods.; Rob Kleiner, Adam Lunn, Fraser T. Smith, others, engs.; Manny Marroquin, others, mix. DDA. TT: 40:23

PERFORMANCE \*\*\*\*

SONICS \*\*\*

Did the world really need a new dance record from 75-year-old Giorgio Moroder, best known for his '70s partnership with the late Donna Summer? Probably not—and anyone who didn't live through the once-disparaged, now-deified disco era will hear this as a mere retread. And yet while no new ground is broken in Moroder's first new record in 30 years, on *Deja-Vu* the past comes alive in ways only he can evoke.

Reportedly inspired by the tribute "Giorgio by Moroder," from Daft Punk's Random Access Memories (2013), Moroder gathered popsters Mikky Ekko, Kelis, Kylie Minogue, and Sia, among others, to be his cowriters and provide vocals for a series of tracks whose beats both the current EDM crew and older disco beatsters will recognize as dance-floor fillers. While Ekko sings powerfully in "Don't Let Go"—even the song titles have a '70s feel—the big surprise is Britney Spears, who nails a low-key take on Suzanne Vega's "Tom's Diner," so memorably remixed by DNA in 1990.

What's disappointing about *Deja-Vu* are the missed opportunities. Moroder could have collaborated with some of his spiritual inheritors, who now inhabit the thriving worlds of EDM and electronic music—Daft Punk, for example?—and created something undeniably new. The only benefit to playing it safe, for disco nostalgists is that Moroder's sonic signatures—the crisp layering, the integration of keyboard sounds from alien to ethnic, the nottoo-heavy bass beats—are all here. Just as if it were 1975 all over again.

-Robert Baird

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#### ROYAL SOUTHERN BROTHERHOOD Don't look Back

Ruf 1215 (CD). 2015. Tom Hambridge, prod.; John Gifford III, eng. ADD.? TT: 73:33

PERFORMANCE \*\*\*

Restructuring has solved Royal Southern Brotherhood's identity crisis. Devon Allman and Mike Zito split to resume solo careers, leaving Cyril Neville as the band's frontman and guiding spirit. By adding a pair of young guitar slingers, Thomas Bart Walker and Tyrone Vaughan (Jimmy's son, Stevie Ray's nephew), the band has turned from being a more conceptual songwriters' group with Greg Allman's son as co-leader, to a flat-out hard-rock/ funk band that fits more easily into the concert format than did the unique and hard-to-define entity it once was. Bassist Charlie Wooten, always the most eager soloist of the original lineup, and pocket-defining drummer Yonrico Scott are now at the center of the action, cutting searing grooves that allow Neville to shine as a vocalist, and give the young guns a solid platform from which to shred, swing, and rock out. It's an exciting sound tailor-made for the festival circuit. When Walker and Vaughan start trading fours, this airship lifts off like the Zeppelins of yore.

Walker is a hell of a singer-songwriter himself, collaborating with Neville on five of this album's songs. But this is Neville's album: he wrote or co-wrote 11 of the album's 14 songs, including: the funk classics "The Big Greasy," "Bayou Baby," and "They Don't Make 'Em Like You No More"; "Better Half" (with nephew Ivan Neville); and the finale, "Anchor Me" (with Anders Osborne). Neville's greatness as an R&B singer is perfectly suited to the extraordinary sonic voodoo that oozes out of every Fame studio production, and this Muscle Shoals extravaganza was expertly produced by Tom Hambridge, who contributes "Hard Blues."-John Swenson



#### LENA WILLEMARK, KARIN NAKAGAWA, ANDERS JORMIN Trees of Light

Lena Willemark, voice, fiddle, viola; Karin Nakagawa, 25-string koto; Anders Jormin, double bass ECM 2406 (CD). 2015. Manfred Eicher, prod.; Johannes Lundberg, eng. DDD. TT: 56:38

PERFORMANCE \*\*\*\*

Trees of Light begins with Karin Nakagawa striking savagely hieratic chords on 25-string koto. It sounds as if it causes physical pain to play the koto this hard; if so, it's worth it. In sound as in title, "Krippaingler" (If You Listen) is an earnest of three musicians' clear intent to create music of bracing originality, strength, grace, darkness, light, gravitas, wit, and utter attentiveness to each other's silences and sounds.

Nakagawa co-composed "Krippaingler" with Lena Willemark, who wrote or co-wrote most of these 12 tracks. This is Willemark's first recording for ECM since Anders Jormin's In winds, in light (2004). Too long. Her combination of field-voice vocal strengths, declamatory sensitivity, and impeccable rhythm is unique. Add to those her diamond-cutter vocal intonation in a Swedish folk tradition founded on quartertones, her prowess on fiddle and viola, her harmonically sophisticated compositions, and lyrics of austere simplicity and formal rigor, and she is a one-woman dreadnaught. She sings in Älvdalsmål (Elfdalian), today spoken by some 2000 Swedes in Willemark's native parish of Älvdalen and considered the living language closest to Old

With roots deep in Swedish and Japanese folk traditions a millennium old, these are art songs of utter modernity with no hint of twee. In "Urbanus," it's not always clear whether Willemark is singing sopranina or playing her fiddle's top string close to the bridge. In "Dröm," Jormin's masteries of rhythm and harmonics give his double bass the sound of an immense thumb piano. Nakagawa can attack the koto with raw

flamenco rage ("Lyösfridhn") or loose from it rainbows of concert-harp glissandi ("Hirajoshi"). "Slingerpolska" has the ecstatic fury of Hungarian Gypsy music with the koto as cimbalom, the rhythm ever interrupting itself with a better idea. "Uoruo" is a constant surprise, each note a knifethrower's blade hurled deep into silence, outlining the beat's shape without ever quite touching it, seeming to enforce the rhythm through implication alone. Willemark's "Minni" is an a cappella tour de force of pace, dynamics, dramatic enunciation. Her "Vilda vindar" (Wild Winds) embodies its titular subject in the style of a folk hymn in which no note is wasted. Throughout Trees of Light, Jormin's precision, delicacy, and power on bass provide counterpoint of Bachlike elegance. And it is all beautifully recorded: intimate, spacious, austere, rich.

I have no idea how to describe such a music made of other musics, each of a tradition profoundly foreign to the others and to mine. Here's what I can say: This music carves itself a home deep in the heart, embodying the sound not of silence, but of listening.

—Richard Lehnert



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JAZZ



#### ANDREW BISHOP De Profundis

Andrew Bishop, flute, clarinet, bass clarinet, soprano & tenor saxophones; Tim Flood, bass; Gerald Cleaver, percussion Envoi env1501 (CD). 2015. Andrew Bishop, prod.; Jason Corey, eng. DDD? TT: 57:16

PERFORMANCE \*\*\*\*

SONICS \*\*\*\*

Michigan-based multi-reedist Andrew Bishop is best known for his work in bands led by Gerald Cleaver. This helps to explain the elevated rapport of Bishop, Cleaver, and bassist Tim Flood in the marvelous trio session *De Profundis* (From the Depths). The command and inventiveness Bishop displays on five different axes are remarkable.

Inspired in part by Renaissance composer Josquin des Préz, the album begins with Bishop's bass clarinet alone, roughhewn yet sumptuously melodic. The sound is crisp: you can hear keys fluttering under his fingers. Flood and Cleaver join as the music exultantly skirts a tempo, ending in a scored contrapuntal ballad theme for horn and bass. Cleaver's brushes lend the piece a subtle rhythmic outline.

"Introit" is the first of six Josquininspired numbers scattered among the disc's 11 tracks: Flute and arco bass coarsely mingle in "Fleeting Light." Tenor sax and bass worry a hypnotic two-note pattern throughout "The Muse." Bass clarinet returns in the punkish, sonically extreme "From the Depths," while "Benedictus" closes the set with a calm and endless mystery.

The five independent pieces reveal extraordinary ranges of technique and expression: from the swinging tenorsax vehicles "Falling Up" and "Now What?" to the slow-grooving sopranosax wailer "There Are Many Monkeys" and the flute-focused chamber jazz of "Six Days, Five Nights (for all parents)." Bishop's clarinet feature is "Bottled (self portrait)," with a mazelike form and rhythmic structure, all perfectly executed even in the heat of improvisation.—David R. Adler



#### CHARLES EVANS On Beauty

Charles Evans, baritone saxophone; David Liebman, soprano saxophone; Ron Stabinsky, piano; Tony Marino, bass More Is More MIM152 (CD). 2015. Charles Evans,

prod.; Jim McGee, eng. DDD? TT: 47:38
PERFORMANCE
SONICS

When Charles Evans titled an album The King of All Instruments (2008), he was referring to the stout, impactful sound of the baritone saxophone. That multitracked solo outing seemed to highlight every capability of the adventurous Evans horn. Yet Subliminal Leaps (2013) uncovered a new dimension of Evans's sound. Pairing with his mentor, David Liebman, who played only soprano sax, Evans offered haunting original compositions in a quartet: the two horns, pianist Ron Stabinsky, and longtime Liebman bassist Tony Marino. On Beauty is the second release by this excellent drumless lineup.

The language of On Beauty is dark, harmonically dense, with a highly porous boundary between the composed and the improvised. Unlike Leaps, it unfolds as a single long suite with an introduction, five main movements, two free interludes for duo horns, and a closing statement: "Ending Beauty." There's an abstract, post-tonal quality to the music, meditative ebbing and flowing, but also stretching out, pushing the horns to their sonic limits. The insistent bass line of "Movement II" returns in the suite's closing moments, clear evidence of the structural detail holding the work together. Throughout, composed themes emerge and dissipate, yielding to free interplay full of, by turns, tumult, silence, and space. Evans's and Liebman's horns are far apart in range, but when, more than once in "Movement IV," their playing unites on the same pitch, the effect is startling. The absence of drums makes each player's entrances and exits stand out more dramatically, enhanced by the clean recording.-David R. Adler



#### WES MONTGOMERY In the Beginning

Wes Montgomery, guitar, bass; Alonzo "Pookie" Johnson, Gene Morris, tenor sax; Buddy Montgomery, piano, vibes; Jack Coker and others, piano; John Dale and others, bass; Sonny Johnson and others, drums; Debbie Andrews, Sonny Parker, vocals

Resonance HCD-2014 (2 CDs). 2014. Zev Feldman, Quincy Jones (disc 2, tracks 4–8), prods.; Frank Laico (disc 2, 4–8), eng. AAD. TT: 2:16:23

PERFORMANCE \*\*\*

Jazz guitar legend Wes Montgomery performed for a decade before cutting his debut album in late 1957. Few of his earlier recordings had been released until producer Zev Feldman patched together this varied collection dating back to 1949. Most of it is from the mid-'50s, recorded for an abortive Epic session produced by Quincy Jones and at live shows in Indianapolis night-clubs. It mostly features the Montgomery-Johnson quintet: Wes and his brothers, Monk and Buddy, and two unrelated Johnsons.

The style is R&B-tinged bebop more akin to the sizzling 1965 club session captured on Wes's *Smokin' at the Half Note* than to his later smooth-jazz and pure-pop studio albums. Montgomery's guitar technique is already brilliant, complete with his signature octave runs and chorded melodies as well as his lightning-quick, thumb-picked single-note lines. The sound quality is at least adequate, with crowd noise enhancing the live ambience of the club dates.

All but one track of disc 1 was recorded at the Turf Club in 1956, mostly with the Montgomery-Johnson band. The red-hot tempos make Wes's virtuosity immediately apparent in the standards "After You've Gone," "Fascinating Rhythm," and "Brazil."

Disc 2 features the tightly controlled five-tune Quincy Jones session from 1955, which does little to showcase Wes as a soloist and three studio tracks from 1949; that swing assuredly while displaying even less of Montgomery's accomplished solo work.—Larry Birnbaum



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- NEIL GADER, The Absolute Sound 40th Anniversary Issue, July 2013





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## MANUFACTURERS' COMMENTS

THIS ISSUE: Ayre Acoustics, Musical Surroundings, and Vinnie Rossi comment on our reviews of their products.

#### **Ayre Acoustics MX-R Twenty**

Editor:

Many sincere thanks to John Atkinson for his review of the Ayre MX-R Twenty amplifier [August 2015]. As we have all come to expect, JA has delivered another of his insightful reviews that generates much food for thought. Clearly, as I read through the section on "Music," the amps delivered much pleasure to his listening sessions

I could stop right there, as that is, after all, the highest goal of all music systems. Yet there was one insight on which I would like to elaborate. In the review's first paragraph, JA states, "because the amplifier's role is so fundamental, it can at first be difficult to determine a given amp's balance of virtues and failings. A paradox."

Clearly this is the case, as in the "Music" section, JA repeatedly praises the low-frequency capabilities of the MX-R Twenty. Yet in the "Comparisons" section he notes that one other amplifier was apparently "weightier." With comparison tests, it is often easy to hear a difference. Sometimes it can be more challenging to determine which is correct.

We recently conducted some listening tests at the Ayre factory that may shed some light. Specifically, we found that adding even very small amounts of negative feedback can yield unexpected and surprising results. The baseline for comparison was the stock circuit, which is a true DC-coupled design, with no coupling capacitors or servo loops, and with zero negative feedback. Both the frequency and phase responses are perfectly flat to 0Hz.

When even a very small amount of negative feedback was applied, changing the low-frequency –3dB point from 0.32Hz to 0.16Hz created an impression of increased bass authority. [This very small change] being roughly 100 times lower than the audioband, this was not the expected result. Even stranger was that there seemed to be a particular value of cutoff frequency that gave the impression of the strongest bass, but going lower than that would *reduce* the amount of apparent bass. As JA says, "a paradox."

Extended listening and comparisons with the true DC-coupled circuit revealed the real story. Once the negative

feedback was applied, all bets were off. Rather than the true and correct low-frequency response of the DC-coupled amplifier, which sounded engaging and involving with any recording of any type of music, the circuit with feedback produced extra amounts of perceived bass that sounded "good" on some recordings and "less good" on other recordings.

Instead of striving for a goal of musical realism and involvement, the circuit with negative feedback became like cooking. It was possible to "spice up" the sound—to make it more spectacular—at least with some recordings. But other recordings didn't need the extra bass—just as many food dishes don't need extra spices.

We chose to stay with our 23-year history of zero-feedback circuitry, which I think explains why JA found that the MX-R Twentys "made my Fender sound—and feel—more as if it were in my hands." I don't think it gets any better than that.

Charles Hansen

......

Ayre Acoustics

#### **DS Audio DS-W1 "Night Rider"** Editor:

Thanks to Michael Fremer and Stereophile for describing the DS Audio DS-W1 "Night Rider" as a "major breakthrough." It is one year since the DS-W1 was introduced, and it has been played at many shows (Hong Kong, RMAF, CES, AXPONA, Munich, and Newport), and positively reviewed in both The Absolute Sound and numerous German magazines. This product has received the highest rating ever given a phono cartridge by Stereo Magazine, in Germany. All agree regarding its specialness, but one wonders if there was a setup or system issue, as well as a misunderstanding of RIAA and the mastering process, that led to this reviewer's conclusions.

MF did a great job of describing the advantages of amplitude-proportional cartridges, quoting their exemplary behavior in both frequency and phase from 2121.5Hz to 20kHz. He goes into great depth regarding "velocity proportional" (MM/MC) designs vs "amplitude proportional (displacement)" designs such as the DS. Regarding the optical cartridge, he states stylus velocity dropping on a displacement design and its effect on output-signal frequency. What

he is trying to state is that the lower the frequency, the less the needle moves back and forth, and vice versa.

MF is incorrect in stating that the cutting is velocity sensitive. It is neither amplitude nor velocity sensitive. Cutter heads are driven by a high-power, broadband amplifier in a servo loop, and directly follow the input signal. A vinyl LP is recorded using constant amplitude across the entire audioband, except between 500 and 2122Hz and below 50Hz, where the recording is constant velocity (flat). MM/MC cartridges will exhibit flat response from 20Hz to 20kHz only with an RIAA-equalized groove modulation played back through an RIAA network. Some of that misunderstanding may have weaved its way into his MF's narrative.

Fremer is correct in stating that the RIAA curve was designed for MM/MC "velocity proportional" cartridges, as they require a great deal of frequency correction. He is incorrect in stating that these same cartridges are flat below 50.5Hz because there is no equalization below that frequency in the RIAA curve. In fact, MM/MC cartridges will roll off at 6dB/octave on a nonequalized signal. This may have been the intent of the RIAA designers, to enhance trackability and better isolate rumble.

In DS Audio's equalization, the cutoff frequency is set at 35Hz with a 6dB/octave slope. (Subsonic adds 12dB/octave from 25Hz up to the 35Hz cutoff). DS Audio does not boost the bass in our EQ design. Fremer simply had to ask us for this spec. He also neglected to describe the design and construction of our phono stage. It is a discrete, dual-mono circuit using high-performance film capacitors, an oversize power supply using Schottky-Barrier diodes for fast recovery time and increased efficiency, and is housed in a rigid chassis with mechanical grounding with spiked feet and spike pads.

Michael fails to compare our product appropriately. He doesn't compare it to similarly priced products, and didn't try it in the same tonearm as the other cartridge he used for comparison. The tonearm he used with the DS-W1 has an effective mass of 14gm. We have used the DS-W1 in tonearms with effective masses of 11–12gm with great success.

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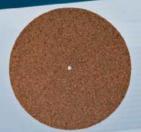
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In the Stereo review from Germany, they used an AMG tonearm with a 12gm effective mass. The Stereophile review does not mention specifics such as the tracking force. Small changes in tracking force can greatly impact sound, as one would expect in any highly resolving phono cartridge, especially considering its interaction with the tonearm's effective mass.

The DS-W1 reproduces a great deal of bass energy by virtue of its displacement design. We have experienced interactions between loudspeakers and a turntable mounted with the DS as a result of speaker and turntable location, room acoustics, and the speakers' bass output. While this sort of problem is typical of many analogbased systems, the bass extension of the DS may exacerbate it, especially with speakers with extended low frequencies in a smaller listening room, as is the case in Fremer's home.

Michael has expressed mixed confidence about his findings, and never performed any measurements. In his review, he uses such qualifying phrases as "probably the result" and "So I'm confident"yet he expressed to me, unsolicited, "I'm fairly confident had JA measured, he'd find a bass boost."

In addition, he never tested the

cartridge with different tonearms. We believe that the issues he faced could have been easily rectified had he simply reached out to us and/or DS Audio. Given our experience with the DS-W1, as well as the worldwide response, it's clear to us that there were setup and system-interaction issues. Garth Leerer Musical Surroundings

#### **Vinnie Rossi LIO**

Editor

I'd like to thank Herb Reichert for his very thorough and thoughtful review of the LIO. Given the option-rich nature of his fully configured review sample, I greatly appreciate the amount of time and effort that he put forward in describing how it communicated music to his ears. I am thrilled to read how well he captured what makes the LIO so unique, both functionally and sonically, for our first review in Stereophile!

I also want to thank John Atkinson for all his effort in putting the LIO through its paces on his test bench. Certain measured anomalies that John mentioned with the MC phonostage input are mostly attributable to the MC step-up transformers. We originally specified active components for MC gain, but ultimately opted for the step-up transformers. The active design measured better in some regards, but we highly preferred the transformers' sound and low noise floor.

As for the Autoformer Volume Control (AVC), I'd like to briefly point out to readers that it behaves best on paper when running from LIO volume setting 1 (-54dB) to setting 54 (unity gain). From volume settings 55 to 63, it is stepping up the input voltage, up to +7dB. As John's measurements show, the trade-off is that, in doing so, it puts more demand on the source driving it. Running the AVC at unity gain or below, where it would be used almost all of the time, also does a better job of driving the next stage by stepping up current (and lowering output impedance) compared to the Resistor Volume Control (RVC), as Herb confirmed while listening and John confirmed via measurement. And even when the AVC is running past unity gain, the peak that John measured fortunately exists well above the audioband (35kHz), and had no overshoot or ringing effects on the LIO's squarewave response.

Once again—many thanks to Herb and John! Vinnie Rossi, Owner Vinnie Rossi

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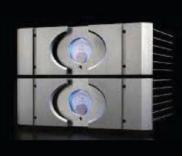
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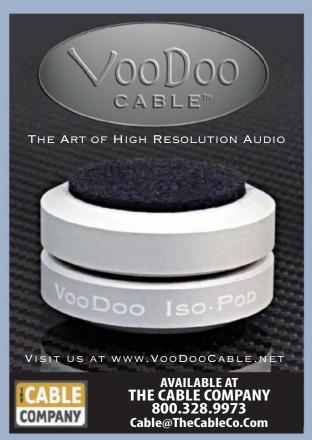




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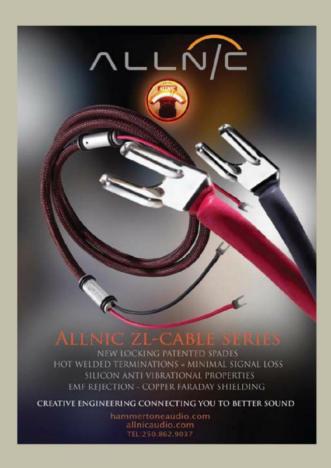
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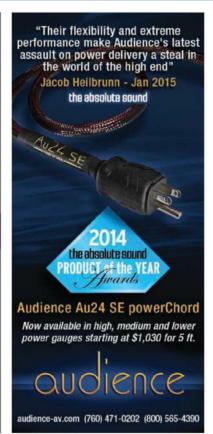
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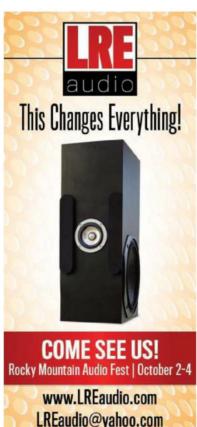
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## AURAL BY ROBERT BAIRD ROBERT

"Once he saw an angle, he looked at it from every angle and kept improving it, making it better, taking a bigger piece. That's really the story. He'd take an idea and just keep growing it."

—FRED GOODMAN

#### The Lost World

ives can be unforgiving mistresses. And husbands, particularly those devoted to stacks of LPs, racks of glowing metal boxes—or that surefire hit, floorstanding speakers—all know that, at times, we are not our wives' favorite person. Yet in most cases the storm passes and warm feelings return. Asked about the character of her husband, the late Allen Klein (1931–2009), onetime manager of the Rolling Stones and the Beatles, Betty Klein said, "When Allen wants something, he sucks the blood out of you."

And yet in writing his latest book, Allen Klein: The Man Who Bailed Out the Beatles, Made the Stones, and Transformed Rock & Roll (Eamon Dolan/Houghton Mifflin Harcourt, 2015), Fred Goodman, today's most gifted chronicler of the endless machinations and juicy details of the pre-streaming music business, came to a grudging respect for a man reputed to be a master manipulator and a foul-mouthed bully. With clearheaded dexterity, Goodman unfolds Klein's emotional and economic complexities to paint a portrait of a man driven by restless needs, but one who's not quite

the monster that some, including his widow, have portrayed him to be.

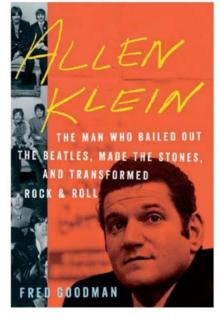
"Look, Allen's no angel, that's for damned sure," Goodman told me in a recent interview, "but the book is not an apology for the guy. It's just like, this is what it is, this is who he was, and this is when it was."

The author of such similarly long-titled explorations as the terrific Mansion on the Hill: Dylan, Young, Geffen, Springsteen, and the Head-on Collison of Rock and Commerce (Vintage, 1998) and Fortune's Fool: Edgar Bronfman Jr., Warner Music, and an Industry in Crisis (Simon & Schuster, 2010), Goodman was approached by the Klein family to consider writing the book. ABKCO Music & Records, the company Klein formed in 1961, has just released a limited edition, 50th Anniversary 180-gram single of the Rolling Stones first US #1 single, "(I Can't Get No) Satisfaction."

Goodman continues, "Jody Klein [Klein's son] said to me, 'Look, a lot was written about my dad; some of it's true, some of it's not true. Would you be interested in taking a look at all our files—I'll give you private stuff too—and just kind of let the chips fall where they may?' He was not looking for any particular judgment, except that he thought that people hadn't really looked at the totality of it. The real story, in his mind, was a story in context.

"I said to him, 'Well, look, you're basically saying to me you want me to see the Beatles and Rolling Stones contracts, all the litigation, and all the correspondence,' and he said, 'Yes, that's what I'm saying."

Klein was born in 1931 in Newark, New Jersey, spent a decade in an orphanage after his mother died, and worked



in the magazine-distribution business before partnering with Philadelphia DJ Jocko Henderson and finally meeting his first important client, Sam Cooke. Klein's landmark deal with Cooke, which gave the singer control of his own recordings, made Klein a force among artists. Later came the successful courtship of the Rolling Stones, via their co-manager Andrew Loog Oldham—and, after the death of Brian Epstein, the Beatles. While Klein cleaned up the Beatles' finances, and got the Stones more money and the status they craved, he eventually got into public scrapes with Paul Mc-

Cartney and Mick Jagger that obscured his good works and muddied his image. Significantly, the Rolling Stones refused to be interviewed for this project.

As Goodman makes clear in his book, if there was any malfeasance in Klein's practices, it lay mostly in sins of omission:

Artists... got whatever royalties they had been promised, and it was always a good deal more than they'd received before meeting Allen Klein. The rub was that he advertised himself as a business manager but didn't enlighten his clients or maximize their income as one might reasonably expect a business manager to do. He improved their incomes dramatically but didn't necessarily spell out where and how he'd participated or how much he was earning.

"If you're really the financial manager," Goodman told me, "instead of saying, 'Okay, I'll get you a million dollars,' you would say, 'You know, that's the wrong thing to ask for.'

"There's real clarity when Irving Azoff says to me, 'Did he take too big a piece? I don't know, probably, but everybody took too big a piece then.' I don't see him doing anything worse than Ahmet [Ertegun, founder and president of Atlantic Records] or any of those guys. Of course, if you're Mick Jagger, you have a different perspective."

By the book's final pages, a man has emerged who, unlike many of his contemporaries, was driven by something other than just money.

"A sense of mastery, a sense of place, a sense of acceptance," Goodman told me. "It's about having the control over his life that he never had when he was in an orphanage, and had a father who wouldn't give him the time of day."

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